Volume 4, Number 4 $3.50

Scholastic's Magazine for Today's Elementary Classrooms

TEACHING and computers®

Published by Scholastic Inc. January 1987

In wave after wave we've come — from Asia, Africa, South America, and Europe — almost 50 million persons in 150 years. Some of us have sought political refuge, others an escape from poverty and a chance to fulfill our dreams. Our contributions have made the United States known throughout the world as:

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SOCIAL STUDIES DATA FILE PROJECT

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Its right brain is as

Ten years ago, Apple® made a commitment. A commitment to teachers. To administrators. And to the education of young minds.

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The Apple IIGS™ personal computer.

For right-brained students, the IIGS has a palette of over 4,000 colors which displays eye-opening graphics with near-photographic resolution.

For left-brained students, more involved in facts and figures, the IIGS is equally impressive.

It has a sophisticated synthesizer with 15 independent voices. And can reproduce the subtleties of the human voice so dramatically that interactive learning is greatly improved in areas like foreign language and primary reading.

With the IIGS, teaching and learning can rise to new levels of effectiveness. It is so versatile that it may be used to teach reading to primary children, search on-line data bases, help teachers develop new course-

*Available first quarter of 1987.

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developed as its left.

ware and even analyze test scores.

It's the first Apple II with a 16-bit microprocessor expandable to the recommended 512K standard or to a remarkable four megabytes. It has built-in ports to add things like printers and modems. As well as expansion slots to ensure that the IIGS will grow with your needs.

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Introducing the Apple IIGS. It can help your students use both sides of the most personal computer of all. Their minds.

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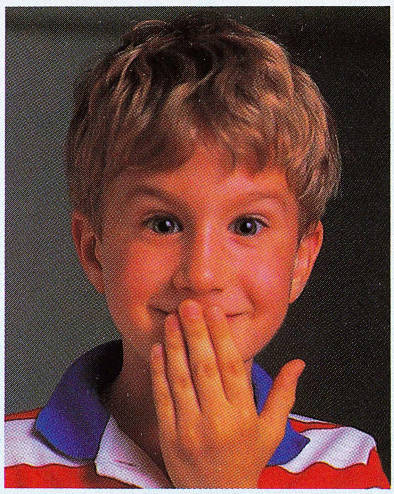
"My computer just talked to me!"



Announcing a breakthrough program for helping students learn to read and write: Scholastic's new *Talking Text Writer!*

There is now a brand-new way your Apple computer can help your students learn to read and write.

It's called *Talking Text Writer,* and what makes it an important development for education is that it marries word processing with speech!

Your students type in their own words, their own stories, their own experiences...

...and *Talking Text Writer* says it back to them, aloud!

More than five years of research has proven that *Talking Text Writer* is a dramatically effective teaching tool for improving reading and writing skills, both among new learners and among remedial learners.

With this program, students not only see their words, their stories, their ideas on the computer screen, as with any word processor.

They also hear what they have created, one letter at a time, one word at a time, or only when they want a whole story repeated back to them. This aural component–immediate feedback and lots of fun, too–is a key factor in the learning-to-read process as well as a powerful stimulus to writing.

Scholastic's *Talking Text Writer.*

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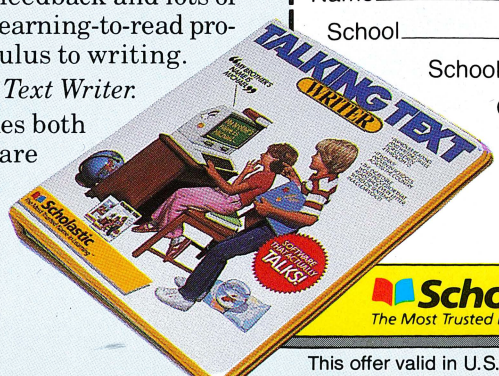
- A speech synthesizer.*
- A User's Handbook that provides scores of classroom-tested suggestions for adapting *Talking Text Writer* to whatever reading program you are currently using...and to each student's individual needs.

Find out more about this innovative development, and what it can mean to your reading program. Just clip the coupon.

*Echo + for the Apple IIe and Cricket for the Apple IIc from Street Electronics.



Yes! Send me more information about Scholastic's breakthrough new program, *Talking Text Writer!*

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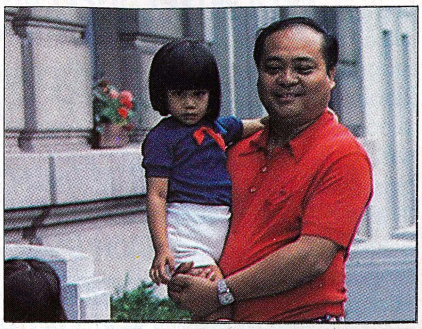
January 1987 Vol.4, Issue 4

TEACHING and computers®

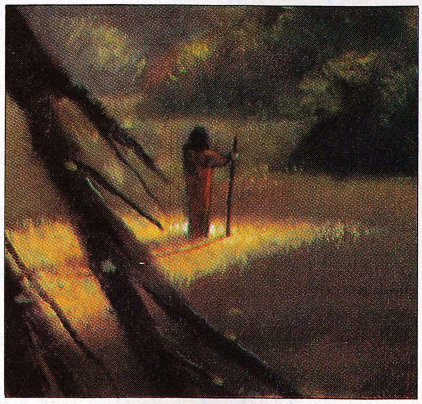
FEATURES:

12 A Nation of Immigrants
The United States has a heritage that extends around the world. This month's cover feature helps children set up a data file of facts about the "waves" of immigration that brought different peoples to America. It will also show kids how to use the data file to analyze some of this history.

20 Write a Fantasy
Fantasy fiction has always been popular *reading* material with students. It takes them beyond the real world to magical places far, far away. Now you can use the *Fantasy Writer* program listing in this article to start children on their own fantastical *writing* odysseys.



12 American immigrants, past and present.



20 Fantastical journeys. . . .

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23 T&C's Poster Worksheets
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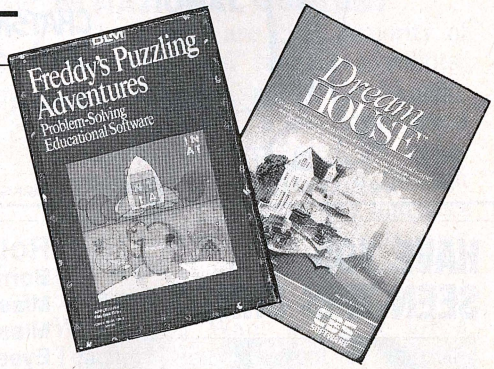

44 Software shopping list.

COVER PHOTO:
GEORGE EASTMAN HOUSE COLLECTION

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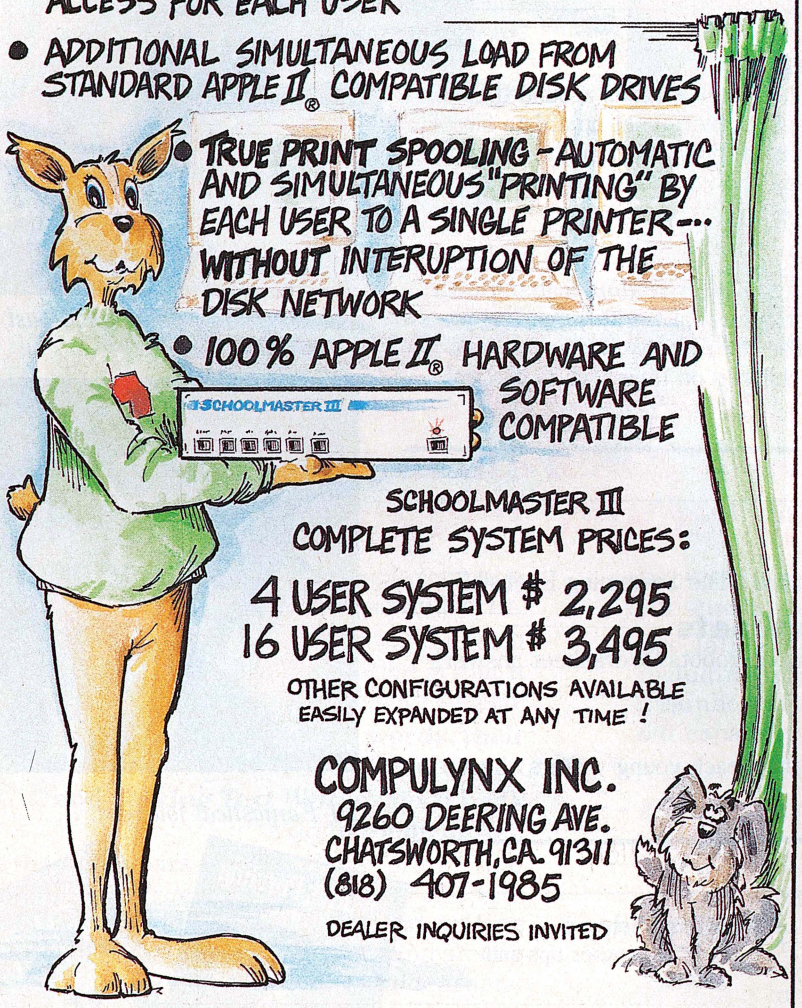

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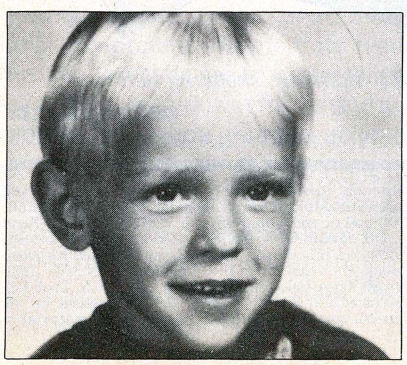

Robert Joseph Fritz

Born: August 5, 1977
Missing From: Campbellsport, WI
Missing Since: May 14, 1983
Eyes: Blue
Hair: Blond

If you have information on the whereabouts of Robert, or if you suspect another child of being a victim of abduction, please contact the National Center for Missing & Exploited Children, 1835 K St., N.W., Suite 700, Washington, D.C. 20006; 800/843-5678 (hotline), 800/826-7653 (for the deaf), 202/634-9836 (in D.C.). All information will be handled in strict confidence.

TEACHING and computers

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UPDATE

NEWS FOR COMPUTER-USING TEACHERS

SCHOOLS INCREASE TECHNOLOGY USE

Forty-two percent of all public schools have at least 11 microcomputers, and 86 percent of schools are using video cassette recorders (VCRs) for instruction, according to Quality Education Data's 1986 census of U.S. schools. The census also revealed that the number of schools that own more than 10 microcomputers has jumped from 23,901 for the previous school year to 31,444 this year, an increase of 32 percent. In addition, the number of schools that own no microcomputers is now only 5,167 or 6.3 percent of all schools. Other findings from the study show that Apple Computers continue to dominate the education market; 60,457 schools out of 76,241 say they own at least one Apple.

ETS BOOKLET HELPS ASSESS COMPUTER COMPETENCE

National Assessment of Educational Progress (NAEP), a branch of Educational Testing Service (ETS) has released a booklet that contains questions educators at any grade level can use to assess what their students know about computers and computer applications. The booklet, *A Framework for Assessing Computer Competence: Defining Objectives*, actually contains objectives and sample questions used for the first national assessment of computer competence that NAEP plans to complete and publish sometime later this year. The booklet, says NAEP, does more than establish a set of guidelines for that assessment; it is a resource from which schools, districts, and states can develop their own programs for improving students' computer competence.

For a copy of the 38-page booklet, send $5 plus $1.50 for postage and handling to National Assessment of Educational Progress, CN 6710, Princeton, NJ 08541-6710.

FREE CATALOG OF SPECIAL ED SOFTWARE

A newly revised and expanded version of *Special Times*, a catalog of software selected specifically for children with learning problems, is available free to parents and educators. It lists more than 150 teacher-recommended programs for developing math, language arts, social studies, science, problem solving, or critical thinking skills. A learning skills matrix outlines specific skill areas covered in each program. The programs are geared for grades K through 8 and are published by a variety of companies. All software carries a one-year guarantee and is offered on a 30-day trial basis. For a copy of the free catalog, write to *Special Times*, CDL, Dept. T, 1696 Massachusetts Ave., Cambridge MA 02138; 800/637-0047.

FILMS & VIDEOS TEACH COMPUTER USAGE

A five-page catalog of free-loan films and videocassettes for elementary school use is available from Modern Talking Picture Service. Among the titles that you can borrow are *About Computers* and *About Information*, both produced by the IBM Corporation. All titles are grouped into these subject areas: Science/Energy/Environment, Social Studies/Current Events, Home/Nutrition, and Health/Safety/Sports. Most are available in 16mm and videocassette versions. Video programs are mailed with free return postage, so borrowers pay nothing. Film users must pay return postage.

For a copy of the catalog, contact Booking Promotion, Modern Talking Picture Service, 5000 Park St. N., St Petersburg, FL 33709.

JOURNAL ON TEACHING WRITING

Looking for some good writing activities? Now in its fourth year of publication, *The Writing Notebook* (formerly *Creative Word Processing in the Classroom)* is a quarterly journal of columns, ideas, and activities that focus on how to teach writing with the use of computers. Each issue contains related book and software reviews, samples of student writing, and a "bulletin board" where teachers can share their own writing ideas. A one-year subscription is $20. Contact: *The Writing Notebook*, P.O. Box 590727, San Francisco, CA 94159; 415/759-9324.

WORD PROCESSOR COMES WITH LESSON PLANS

FrEdWriter (short for Free Education Writer), a popular public domain word processor for students and teachers, is now available in a package that contains a new product called *FrEdLessons*. These are model lesson plans for teaching process writing in grades 4 through 12. When you order the package, you receive the lesson plans, plus two versions of *FrEdWriter* (one with complete documentation; the other, called *Frilless FrEd,* with extra space so that students can save their work right on the disk), as well as *FrEdTips*, a tutorial for teachers.

FrEdWriter is designed so that teachers can input questions into highlighted boxes that will appear on the screen. These prompts magically disappear, however, when students print out their work. *FrEdLessons*, which contains ideas for students on how to write and analyze tall tales, poetry, fables, and short stories, are open for teacher revision. For a copy of the five-disk package, send $40 to: Cue Softswap, Steele Publishing, P.O. Box 5493, Concord, CA 94524.

ROBOT TEACHERS LOSE IN NATIONAL CONTEST

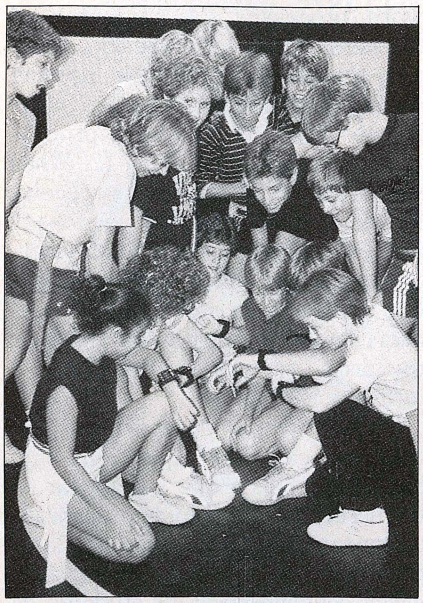
The results are in. A majority of kids prefer "real" teachers to robots. That finding was reported by Monday Morning Books, a California-based company that sponsored an essay contest for kids in grades K through 12. The 10,000 elementary and secondary students nationwide who took part in the contest had to respond in 50 words or less to this question: Would You Want a Robot for a Teacher? Sixty percent of respondents said "no." Lisa Aday, an eighth grader in Oklahoma, for example, didn't want a computerized teacher because "[It] wasn't a little kid once." Megan Steele, a second grader in Michigan was worried that "students would be the ones to buy the batteries." Then she added this: "I didn't say this to the computer but I like my human teacher better." ■

CLASSROOM HAPPENINGS

WHAT'S HAPPENING IN COMPUTER CLASSROOMS

COMPUTERS HELP IMPROVE PHYSICAL FITNESS

At the Tilford Middle School in Vinton, Iowa, physical fitness class means more to students than sit-ups, jogging, and competitive games.



Beth Kirkpatrick

Students set their monitors (black wristbands) before a workout.

Ever since 1981, Beth Kirkpatrick, physical education instructor at the school, has taught her kids to strive for a balance between agility, speed, eye-hand coordination, and the health-oriented counterparts of these skills: cardiovascular fitness, muscular endurance, strength, lung volume, and stress management.

How does she do it? By using computers, of course!

During gym classes, Beth's students take turns wearing Quantum XL Fitness Monitors, which look like small watchbands, around their wrists, and chordless electrode straps wrapped about their chests.

According to Quantum, Beth is the first physical education instructor to ever use these monitors in a public school environment. As a wearer exercises, the monitor records at five-second intervals the aerobic, anaerobic, maximum, and recovery heart rates of the user. In other words, once the information is downloaded into the school's Commodore 64 computer, Beth and her students can see for themselves how much effort was exerted by each student, and what physical effect that exertion had on the person. It allows Beth to recognize possible health problems in her students, and to evaluate individuals according to their abilities.

"A 10-minute mile may be aerobically right for one child," explains Beth, "and a six-minute mile an accomplishment for another. If the computer tells me that this is the case, I can give both students high evaluations, rather than pit them one against the other."

Has the computer given Beth results?

"You bet!" Beth says. "Our school went from a 15 percent average or above cardiovascular fitness level six years ago, to an 87 percent average this past year. If that's not improvement, then I don't know what is!"

If you're interested in acquiring fitness monitors for your school, or in finding out more about Beth's fitness program, contact Dr. Irving Dardik at Quantum Life Systems, Route 1, Box 253, Hillcrest Dr., Great Meadows, NJ 07838; 201/637-6568.

TURTLE HELPERS

Kids in Peter Rawitsch's first grade class at the Glenmont Elementary School in Glenmont, New York, are very much "into" turtles these days. Since September, they have learned much about where turtles live, what they eat, and how they move about. They have learned about Logo turtles and robot turtles, too.

Most on their minds, however, is a special kind of turtle that lives on a 20-mile stretch of sand on the Mexican Gulf Coast. It's called the Kemp's ridley sea turtle, and, Peter's students now know, it's the most endangered species of turtle in the world.

When Peter heard about the plight of the ridleys, he decided to involve his class in the fight to save them. Through an organization called HEART (Help Endangered Animals: Ridley Turtles), Peter borrowed a video tape about the ridley that he showed in class. He also obtained brochures, booklets, and posters that HEART provides to school teachers free of charge. Most importantly, however, Peter and his young students brainstormed a list of ways that they could raise money to help save the turtles. A donation of $4, they learned, feeds a ridley turtle for a year; $1 buys a plastic bucket for hatchling ridleys to swim in; $3 a crate for shipping stray ridleys to where they can best be cared for.

Jeff Simon

Logo students in Glenmont, New York, have become interested in a real turtle — the endangered ridley — and are helping to save it through money-raising efforts.

Helping to save the ridleys, Peter realized, is a perfect tie-in with the Logo that he is teaching. "My students are not just looking at 'turtles' anymore," Peter boasts. "We're getting involved with them. My six-year-olds understand that Logo turtles don't need food and water to survive, but that other turtles do. The ridley has given them a way to combine Logo learning with lessons about the real world."

To learn how your students can help save the ridleys, write: HEART, P.O. Box 681231, Houston, TX 77268-1231. ■

BY JACKIE GLASTHAL

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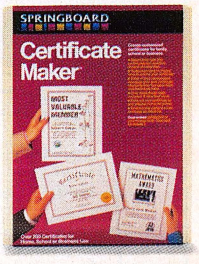

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Seven New Computer-Based Products To Help K-8 Teachers Use the Computer In the Curriculum.

Here, at last, are the classroom computer products that so many teachers have been asking for.

Products that will help you teach social studies, science, language arts, math—and not just computer skills.

Products packed with lessons that students can do on their own; others that you can complete in 15 or 20 minutes; still others that knit seamlessly into your existing curriculum plans to help you use the computer more effectively.

The costs are low, the variety is tremendous, and the excitement of teaching with the help of a computer is all yours. From the pages of the #1 classroom computer magazine for K-8: *Teaching and Computers*.

Computer Poster Pack

Grades K-8

8 colorful computer-awareness wall posters (16 × 22), each with reproducible worksheets that reinforce concepts taught on the posters: computer history, parts of the computer, the keyboard, BASIC programming, Logo, and more. Teaching Guide includes worksheet answers and suggestions for additional activities. Reprinted from *Teaching and Computers* magazine.

Item Number XY39341 $9.95

Micro Puzzles

Grades 3-8

Forty pencil-and-paper puzzles for independent student work. Perforated blackline masters photocopy well and help teach programming basics, computer history, computing vocabulary, computer applications, and robotics. Published previously in *Teaching and Computers* magazine.

Item Number XY39308 $5.95

Science Lesson Plans

Grades 3-8

10 brief science lessons from Teaching and Computers magazine (energy, nutrition, plants, animals, space, the human body), each with a complete plan (including reproducible worksheets) and each with an easy-to-use BASIC program already on a disk for you. Includes how to make your own science quizzes on any topic.

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Item Number XY39309 $19.95

Available Spring, 1987:

Social Studies Lesson Plans

Grades 3-8

10 social studies lessons from *Teaching and Computers* magazine (world geography, Black history, the stock market, election campaigns), each with a complete plan (including reproducible worksheets) and each with a ready-to-use program on a disk to save you time. Includes how to make your own social studies quizzes.

Apple
Item Number XY39278 *$19.95*

Available Jan., 1987:

Story Writing Task Cards

Grades 3-8

32 Task Cards, plus a data disk, that help students use a word processor to develop story-writing skills: writing descriptions, developing plots and settings, vocabulary enrichment, more. Requires Bank Street Writer word processing program.

Apple
Item Number XY39310 *$19.95*

30-Day Evaluation Offer!

The Computer Ideabook

Grades 3-8

More than 30 self-contained lesson plans any classroom teacher can use with any major machine to integrate the computer into such curriculum areas as reading, language arts, social studies, math, science, music, and art. Many lessons include reproducible worksheets, task cards, recommended software, and program listings.

Item Number XY39046 *$15.95*

Holiday Computer Activities

Grades 3-8

Next time you celebrate a holiday with your class, let your computer join in! More than 200 self-contained activities (Thanksgiving, Fire Prevention Week, Election Day, Black History Month, Mother's Day, Bicycle Safety Week) with reproducible worksheets, task cards, and BASIC program listings. For use with any major computer.

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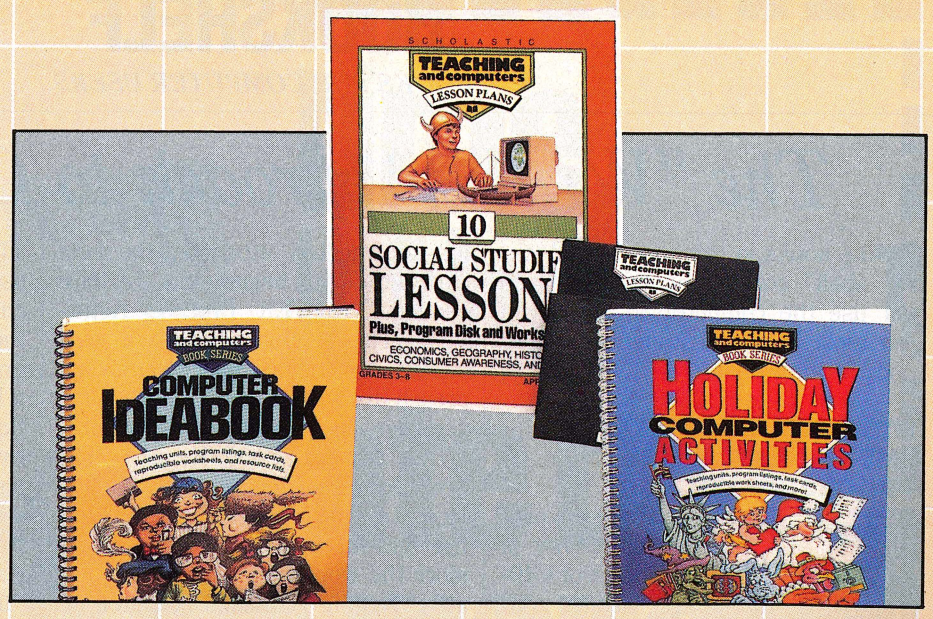

Order Form

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Please send the following materials. I understand that if any item proves unsuited to my needs, I may return it within 30 days for a refund or cancellation of my bill. (NOTE: All returns must be in resaleable condition.)

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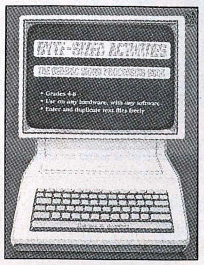
The "Write" Approach to Computers

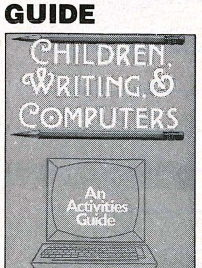
The books in this month's "Bookshelf" column tell how you can use the computer to help even the most reluctant students develop good writing skills.

BYTE-SIZED ACTIVITIES: THE GENERIC WORD PROCESSING BOOK



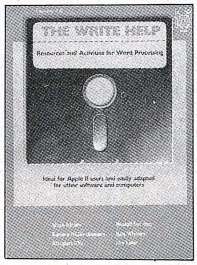
Each word processing activity in Tom Boudrot's 40-page volume consists of two sides of a page, perforated for your convenience. One side is instructions to kids; the other, a listing (always short) of a computer data file that children will need to call up in order to follow the activity instructions. If you are comfortable with your word processor, you can probably type onto disk all 18 data files within an hour. Activities are designed to appeal to youngsters in grades four through eight. They include mazes, codes, ancient tombs, and even a "Dear Abby"-type letter in which students are the problem solvers. The skills covered range from working with cursor movement, file retrieval, and text deletion to using a thesaurus, drawing conclusions, and identifying parts of speech. An answer key, skills index, glossary of word processing terms, and index of files complete this small but helpful package. Price: *$5.95.* Contact: *Scott, Foresman and Co., 1900 East Lake Ave., Glenview, IL 60025.*

CHILDREN, WRITING, & COMPUTERS: AN ACTIVITIES GUIDE



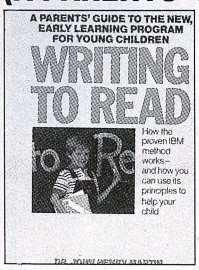
In ***Children, Writing, & Computers***, Gwen Solomon has created a sourcebook of activities for use with any word processing program. After a lengthy introduction for teachers, and a shorter one for intermediate students, the best part of the book begins. It is the third section, "POWER Process Activities." This section provides a wide variety of activities based on an approach to writing called POWER (an acronym for: Prewrite, Organize, Write, Evaluate, and Revise). The first chapter of this section, "Beginning Activities," provides exercises that introduce keyboarding and explore the word processor. The "Creative Writing Activities" chapter offers ideas for using the word processor to write stories, poetry, plays, newspaper and magazine articles, radio broadcasts, television programs, and friendly letters. The "Formal Writing Activities" chapter covers business letters, compositions, essays, and reports. The final chapter, "Finishing Touches," explores the evaluation, revision, proofreading, and editing of a written piece. The first activity in each chapter of the third section consists of detailed prompts that keep students mindful of the POWER process. Subsequent activities are "one-liners" diverse enough to appeal to a variety of student interests. Price: *$13.95.* Contact: *Prentice-Hall, Englewood Cliffs, NJ 07632.*

THE WRITE HELP: RESOURCES AND ACTIVITIES FOR WORD PROCESSING



In order to best help word processing newcomers, Hugh Mehan, Randall Souviney, and the other four authors of ***The Write Help*** decided to design their sourcebook so that it would be used with a specific word processing program. That way, they reasoned, they could give very specific instruction. The authors chose *The Writer's Assistant* program. Fourth through eighth grade teachers with other word processing software should have very little trouble, however, adapting these activities for their own use. Beginning chapters review the current use of micros in the schools, the interactive capabilities of computers, and the writing process (includes a helpful section on software evaluation). Starting with chapter four, activities are introduced. Listed for each activity are corresponding objectives, the amount of time required to complete the activity, and materials needed. Activity chapters include: "Introducing the Classroom Computer," "Learning the Editor Commands," " Writing Poetry," "Expository Writing," and "Classroom Newspapers and Networks." An extensive list of resources, a glossary, and blackline masters round out this helpful text. Price: *$9.95.* Contact: *Scott, Foresman and Co., 1900 East Lake Ave., Glenview, IL 60025.*

WRITING TO READ (A PARENTS' GUIDE)



John Martin and Ardy Friedberg's parents' guide to IBM's well-known Writing to Read program can be helpful to teachers as well as to parents. The book emphasizes how the program uses a sensory approach to teach children to convert the sounds they already speak into sounds they can write down and read. Much of this information is not new to teachers, but they will appreciate the many specific writing/reading activities that are suggested throughout the book. This book is a must for professional libraries at the district level, and at the building level, wherever the Writing to Read program is in use. Price: *$17.95.* Contact: *Warner Books, Inc., 666 Fifth Ave., New York, NY 10103.* ■

Candy Colborn is a media specialist at Cottonwood Creek Elementary School in Englewood, CO.

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The "Write" Appr

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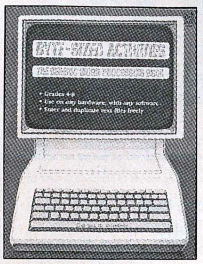
BYTE-SIZED ACTIVITIES: THE GENERIC WORD PROCESSING BOOK



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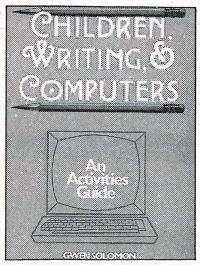

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America was immigrants, and so arrived in 1748, 1898, or 1986, they were new lives in a new land. With the exception of American the many black Americans whose forebears were brought here against

This teaching unit provides basic background information on American immigration, then outlines two sets of computer activities: (1) creation of a computer data file, and (2) use of that file as a tool to analyze history. Depending on your teaching objectives — whether they are to teach practical data management skills, higher level thinking skills, or both — you can implement the activity sets separately or together.

In any case, you will need access to at least one computer, a printer, a data management program, and enlarged copies of Charts #1 and #2, which are shown on page 19. Having a world map on display will help provide a context for your class discussions. Your students will also need access to encyclopedias and other reference sources that contain facts and statistics about immigrants to America and the countries from which they emigrated.

Charts #1 and #2 are adapted from the *Statistical Yearbook of the Immigration and Naturalization Service*, published annually by the Immigration and Naturalization Service of the U.S. Department of Justice. The book covers virtually every aspect of immigration to the United States from 1820 to the present. You might want to order the *Yearbook* for use as a class resource, especially if students wish to explore immigration to your local area or emigration from countries not listed on Chart #2. The 1982 edition of the *Yearbook* — the most recent available to the public — can be purchased for $8 through the U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402. Allow three to six weeks for delivery.

The data file activities in this teaching unit were created using the *Scholastic pfs: file* data management system. The activities can be adapted for use with any data base program, however. If you have never used data base software before — or if you're not quite sure how data bases work — check the "Data Base Primer" on page 17 for a simple introduction.

INTRODUCING THE SUBJECT

Explain to your students that, from the beginning, immigration to America has occurred in *waves*, like the waves that move in the ocean. Each wave has been different somehow from the ones before and after it: in size, in length of time, or in the part of the world from which it came. These patterns of movement brought people from all over the globe to these shores. As you provide students with the following overview, you might want to indicate the sources of each wave on your world map.

The first major wave — after the American colonies became the United States — took place between 1831 and 1860. Most of the people coming to America then were from northern and western European countries such

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A NATION OF IMMIGRANTS

Social Studies Data Project

born as a nation of it remains. Whether our families all at some point newcomers starting Indians—whose ancestors were already here—and their will, ours is an immigrant heritage.

as England, Ireland, Germany, Norway, and Sweden.

During the second wave, from 1861 to 1890, immigrants from the south and east — particularly from Italy and parts of Russia — swelled the flow of newcomers to America.

By the third wave, at the turn of this century, immigrants from southern and eastern Europe predominated, with significant additions from Greece, Hungary, Poland, Portugal, and Spain.

The fourth wave of immigration, tell students, started out slowly, due mainly to the hard times of the Great Depression in the early 1930s. But World War II and the political upheavals that followed soon brought a new stream of immigrants from Europe, and, to a lesser degree, from Asia.

By contrast, America's fifth wave of immigration — our current wave — has drawn an increasing number of newcomers from Asia, Latin America, and the Caribbean.

Tell students that this data file project is a chance to learn more about the patterns and sources of America's immigrant heritage, through two kinds of facts: number facts and word facts. Number facts tell how many people came and when they arrived. Word facts tell where they came from and why.

LEARNING A NEW VOCABULARY

Explain to students that before they work with these facts they will need to learn some new vocabulary words. Go over the list of immigration terms (see box on page 15) carefully with your class; some can be tricky (like the differences between *immigration* and *emigration*). Stress to students that it is important that they know what each word means. They will come across the terms many times during the course of their research. (You might want to make a vocabulary poster for easy classroom reference — perhaps a picture of the Statue of Liberty with her torch in one hand, and a scroll with these terms in the other.)

WORKING WITH STATISTICS

Explain to students that before they start this project, they will also need to know how to read the kind of chart that has number facts or *statistics* on it.

Give each child a copy of Charts #1 and #2. Then use an overhead projector or poster-size blowups of the charts at the front of the room to lead your students through the following discussion.

Explain that the statistics in Charts #1 and #2 have been chosen from a very large book of statistics on immigration that the U.S. government puts together every year. (If you have managed to acquire a copy of the *Statistical Yearbook,* you might at this point pass it around or put it in a central spot for your students to look at. You might also mention that computers play a very important part in

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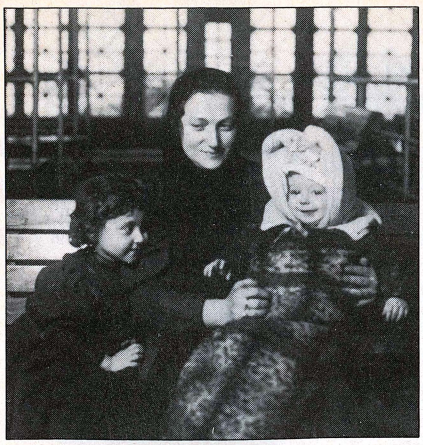

The number of immigrants that arrived during Wave #3 is almost equal to the current population of California.

keeping these figures accurate and up-to-date.) Tell students that Charts #1 and #2 have been created especially to provide the statistics they will need for this immigration data file project.

Explain that, like most charts, these have two major parts: *columns*, which go up and down like the columns of a building or columns of type in a newspaper; and *rows*, which go from side to side like a row of letters in a sentence or a row of students in a class photograph.

Turn to Chart #1 and explain that this chart sums up the overall picture of immigration to America since 1830. Remind your students about the five waves of immigration you discussed earlier, and point out that these are listed in Chart #1. Read aloud each wave number and the time period it covers. Spot check children's understanding by having them respond with a time period when you call out a wave number, and vice versa.

Next, draw students' attention to the "Number of Immigrants" column. Help them get comfortable with these large figures by reading them aloud, following with a pointer. Compare the figures with the current population of American cities and states (readily available in the *World Almanac*). This will help students understand the important impact that immigrants have had on this country. For example, the number of immigrants arriving during Wave #3 (more than 22 million) is almost equal to the current population of California. The number of immigrants arriving during Wave #5, from 1951 to 1980, (10,330,470) would have filled New York City almost one and a half times.

When your students are familiar with Chart #1, turn to Chart #2. Explain that the first column of this chart, entitled "Country," is a partial list of places that have contributed to America's immigrant heritage. This list includes 19 countries and Africa. (Remind students that Africa is a *continent* made up of many different countries, a number of which have formed as new nations or changed their names and boundaries during the twentieth century. While many of these countries have individually contributed small numbers of their people to America, it is by adding them together that we best understand the overall importance of African immigration.) Go down the column and pronounce each name aloud. Then point out its location on the world map. Explain the asterisked material at the bottom of Chart #2 as you go along, noting with your students how much change there has been in the names and boundaries of the world's countries, and how different your world map would have looked in 1830!

Return to the top of the chart, and point out the next five column headings. Do students recognize the wave numbers and time periods from Chart #1? Explain that Chart #2 lists the number of immigrants from each country during each of these different wave periods. Point out the wide variety of figures listed on this chart. Also note those entries that are marked "NA" for "Not Available," and explain that this means that the United States government does not have separate records on immigration from these countries during the specified time period, either because they were part of other countries at that time, or because so few people emigrated.

Show your students how to follow Chart #2's columns and rows to find the appropriate statistic for a specified country and wave period.

ASSIGNING THE RESEARCH TEAMS

Next, divide your class into research teams of five students each, and assign or have each group select one country from the list on Chart #2 to research for a data file "test run." (If your class is of average size, each team will ultimately be researching three or four of the 20 countries listed on Chart #2 during the course of this project.)

Tell each team that it is responsible for researching all five waves of immigration on the country it has chosen for the test run. Have each member of the team pick one wave to concentrate on.

DESIGNING A DATA RECORD

Below is a sample design for a data base record about immigration. For the countries they have chosen to research, students can fill in a record like this by using data found in Charts #1 and #2, plus encyclopedias and other standard library references.

SAMPLE IMMIGRATION RECORD

COUNTRY OF ORIGIN:
WAVE #:
FROM: TO:
TOTAL IMMIGRANTS IN THIS WAVE:
OF IMMIGRANTS FROM COUNTRY:
REASON THEY CAME #1:
REASON THEY CAME #2:
REASON THEY CAME #3:
RELATED HISTORICAL INFORMATION:

Boot up your data base program and type in the design as it appears or as modified to fit your data management program and teaching objectives. For example, if you are using a data management program that will perform math calculations, you might

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want to add a field indicating what percentage immigrants from this particular country make up of the total immigrants in this wave. If you have the needed statistics, you may want to add a field that shows the number of immigrants from each country that have settled in your own state or city. The nonstatistical parts of the record can be modified, too. For example, you might want to add a field that lists famous immigrant Americans from each country, and what their major achievements in the United States have been.

As you type in the data record design, be sure to abbreviate words where necessary to suit the space limitations of your data base program.

Next, print out an empty data record and photocopy it for distribution to your students to use as a research worksheet. Each student should get one copy to fill in for the initial research and data entry test run.

FILLING IN THE DATA WORKSHEETS

When your students have their blank data record/worksheets in hand, use an overhead projector to display a blowup of the blank data record at the front of the room.

Explain to your students that they will each fill in a worksheet for the particular country and wave period they have chosen for the test run, and then enter all the information from the worksheet into the computer. Once the test run is complete, they will be repeating the process for the additional countries and waves their team selects. The result will be a computer data file on immigration.

Stress that the data file will work best if all information is recorded carefully and consistently — if all spellings are correct, for example, and if everyone uses the same abbreviations. Ask your students to keep this in mind as they prepare to fill in the data record worksheet.

Tell your students that although their research on immigration will soon lead them to the library, some of the information they'll need to fill in the worksheet for their particular country and wave period is on Charts #1 and #2. Tell them to have their copies of the charts handy to fill in these fields as you indicate them during the following field-by-field discussion of the worksheet.

Country of Origin: This refers to the country from which an immi-

(continued)

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GLOSSARY OF IMMIGRATION TERMS

Immigration: The act of settling in a new country.
Emigration: The act of leaving one's home country for a life elsewhere.
Population: The total number of people living in an area.
Decade: A period of 10 years.
Census: An official count of the population.
Assimilation: The process by which an immigrant group becomes part of an already existing culture.
Melting Pot: A country, city, or region in which people of different nationalities mix together, like ingredients in a stew.
Quota: In this context, a limit placed on the number of people from a certain country or region allowed to immigrate to the United States.
Refugee: One who leaves his or her country for fear of dangers there.
Naturalization: The legal process by which immigrants gain citizenship in a country.
Ellis Island: An island outside New York harbor where, at the turn of the century, the thousands of immigrants arriving by boat from Europe and elsewhere were stopped first for examination by American authorities. Ellis Island is now a museum honoring the many immigrants whose landing there was their first step on American soil.
Alien: Any person living or visiting in the United States (legally or illegally) who remains a citizen of another country.
Permanent resident: A person who has legally emigrated to America, but is not yet a United States citizen.

People emigrate for many reasons: to avoid war, economic hardship, religious persecution, natural disaster. . .

grant group came to America. Tell students to write in the name of the country from Chart #2 that their team will be researching. Remind students to be careful about their spelling here.

Wave#, From, To: In these three fields, students should identify the specific wave of immigration they will be researching for their team. Tell them to consult either chart to write in the appropriate numeral from 1 to 5 in the WAVE# field and the corresponding start and end dates for that wave in the FROM and TO fields, respectively. Have the members of each team check each other's entries for accuracy.

Explain to students that some reference books they encounter later in their library research may disagree on the precise start and end dates for these wave periods. The wave periods in Charts #1 and #2 correspond with statistics provided in the *Statistical Yearbook of the Immigration and Naturalization Service.*

Total Immigrant Population: This field refers to the total number of immigrants from all countries who arrived in America during a given wave period. This information is found on Chart #1. Tell students to use the columns and rows of Chart #1 to find and write in the appropriate figure for the wave of immigration they have chosen to study individually. Caution them to count their numerals and commas to make sure the figure they write down is correct.

Number of Immigrants from Country: This field is for recording the number of immigrants that arrived from a specific country of origin during the wave period to which a record refers. Students will find this information on Chart #2; remind them about using the columns and rows to find the statistic they need. If Chart #2 lists "NA" (Not Available) for the country and wave they are researching, tell students to enter a zero in this field on their data worksheets (but remind them that this zero does not mean that there were literally no immigrants from this country to America during this wave — see explanation in Working with Statistics section). Again, have the members of each team check each other's entries.

Reasons They Came: Tell students that these fields (and any others you have added to the data record) will require them to research word facts in the library or classroom reference center. Before setting them loose with the encyclopedia, however, hold a group discussion to come up with agreed-upon ways for recording these facts on the data record.

Have your students brainstorm a list of reasons why people might want to *emigrate,* or leave their homeland for a new country. Jot these reasons on the chalkboard. (Your list should include: economic hardship, political factors, religious persecution, natural disaster, disease, war, and overpopulation, to name a few.) Then decide with your class on standard terms for each of these reasons. Depending on the limitations of your data file program, these could be phrases, single words, or abbreviations. Keep a list of these terms posted at the front of the class, or photocopy them so each student has a copy.

The data record design provides room for up to three reasons (in order of priority) why each group left its homeland to come to America. In some cases, there will be just one very clear reason: the immigrants from Cuba during Wave #5, for example, left because of *political factors* related to the rise of Fidel Castro's communist government. More often, though, it is a combination of factors that convinces people to pull up their roots and start over in a new place. Students will need to read their library research materials carefully and discuss any uncertainties with their teammates.

If, during the course of their research, students discover additional reasons why people have left a country to come to America, they can decide as a group to add additional standard terms to their list.

Related Historical Information: The "reasons" that students enter in the REASONS THEY CAME field of their worksheets are, of course, very general. To say that disease and natural disaster caused more than four million Italians to emigrate to America from 1891 to 1930, for example, only begins to tell the story. Phylloxera (a plant parasite) destroyed the livelihood of many Italian farmers and wine exporters. Others were frightened into leaving the country when a cholera epidemic hit their homeland in 1897. There were other reasons for the emigration as well.

Your data record should allow as much space as possible for the field RELATED HISTORICAL INFORMATION. Encourage your students to record as much detailed information as the record will allow.

How the teams carry out their library research will depend on the reference resources they have to work with, their skill level, and the amount of time available to them. If your whole class will be using one set of encyclopedias, for example, it might make sense to have the teams read up on their countries of origin as a group, rather than making each student a library detective just for his or her own wave period. The same ap-

U.S. Department of Interior

proach might be best for those teams researching countries whose emigration to America has become significant only in recent years (as indicated by an "NA" on Chart #2 for the early wave periods). Encourage each team's members to share information and suggestions freely among themselves and with other teams.

REVIEWING THE INFORMATION

When the researchers feel they have recorded as much information as possible in the last two fields of their worksheets, they should reconvene with their teams and compare notes. Do the various pieces of information on their selected country fit together? Are there any gaps in the data? Have team members recorded their information in a consistent fashion?

After a final group check for completeness and accuracy, each team should present its worksheets to you for review.

ENTERING DATA

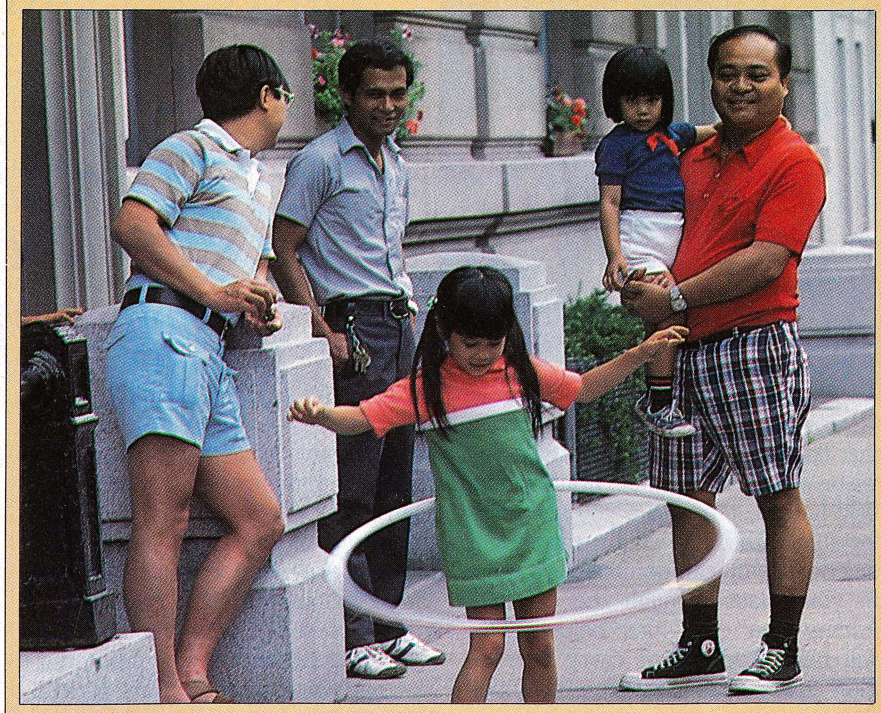
When you are satisfied with the data your students have on their worksheets, explain that they are now ready to transfer this information into the classroom computer data file. Each worksheet — that is, each wave from each country — receives its own record.

Have children take turns entering their data into the computer. Assign each child a partner (for variety's sake, someone from another research team) to read the worksheet data aloud while he or she types it in. Then both students can visually check the screen for any typographical or other errors.

REVIEWING THE TEST RUN

After all the teams have entered the data for their test run countries, show them how to print out their data records. They should then reconvene as teams to look the printouts over. Do the printouts accurately reflect the research worksheets? What problems do there appear to be in the entry and storage of data? Could the data record design itself be improved?

As a class, discuss and then implement any necessary modifications in the data file design and data collection procedures. Then have the teams divide among themselves the remaining countries from Chart #2 and repeat the research and data entry process described above for each country during each of the five waves of immigration.



James H. Karales/© Peter Arnold, Inc.

DATA BASE PRIMER

For Beginners Only

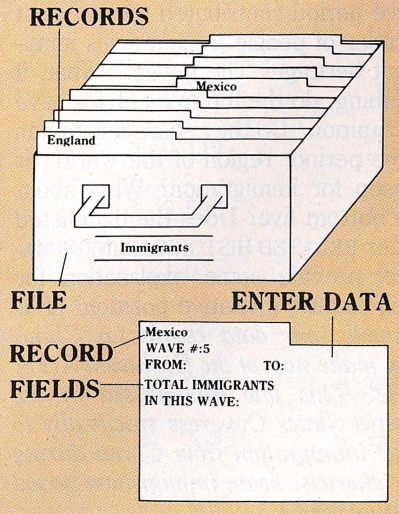
A data base management program is like an electronic filing cabinet or a computerized index-card box. It is a piece of software that lets you organize, store, and retrieve information.

All data management programs contain three important elements: fields, records, and files.

1. Field: A field is a category or item of information. For example, in the immigration data file, COUNTRY OF ORIGIN, WAVE #, and TOTAL IMMIGRANTS IN THIS WAVE are all fields.

2. Record: A record is a collection or listing of related fields. In the immigration data file, each wave of emigration from each country of origin gets its own record. For example, one record might contain data about England during Wave #1, including number of immigrants, reasons they came, and related historical information; similar data for Mexico during Wave #5 would make up a separate record.

3. File: A file is a collection of related records. In this feature, the record for England during Wave #1, the record for Mexico during Wave #5, and records for as many as 20 countries total during each of five wave periods together make up the immigration data file.



USING THE FILE

Once all data entry is complete, your students will have created a data file that covers 150 years and five distinct phases of American immigration history, and that involves as many as 20 different places of origin. Students can use their data base program's sort, search, select, and print functions to analyze this wide base of data in a number of useful and interesting ways.

Review for yourself first how your data management program works. Can it sort and search by two or more fields simultaneously? Will it print out selected information from

(continued)

Students may want to do research at home to find out why their own ancestors came to America.

the data records in any order you wish, with or without printing the field names, too? Once you feel comfortable with these data management functions, you can demonstrate them to your class through the "Overall Immigration" activities below. This will help students to carry out, on their own, the extension activities that follow.

The Overall Immigration Picture: Have the data management program sort and print out all of your data records in descending order by the NUMBER OF IMMIGRANTS FROM COUNTRY field. Display or distribute the printout and lead your class through a discussion of such questions as: Which country in which wave period contributed the greatest number of people to America's immigrant heritage? The fewest? What, if anything, do the top five entries have in common? Do they share a common wave period, region of the world, or reason for immigration? What about the bottom five? Does the data listed under RELATED HISTORICAL INFORMATION provide some explanation for each country's relative position? *(For example, one data record for China may make note of the Exclusion Act of 1882. This law was passed by the United States Congress specifically to limit immigration from China during the otherwise heavy immigration period of Wave #3.)*

Wave By Wave: Help students to think through how to tell the computer to select all of the records pertaining to the same wave period, and then how to sort the records within each wave to answer such questions as:

- Which country in each wave had the largest number of immigrants? The smallest number? *(Sort by* NUMBER OF IMMIGRANTS FROM COUNTRY.*)*
- Do the major contributing countries in each wave have anything in common? Are they in the same geographical region? *(See above, then check the world map.)* Did their people emigrate to America for similar reasons? *(Sort by* REASONS THEY CAME.*)*
- What were the most common reasons, in general, for emigration during this wave period? *(Sort by* REASONS THEY CAME.*)* Were there any special circumstances in the countries of origin or in America during this wave that especially affected immigration? *(Analyze the* RELATED HISTORICAL INFORMATION *field in each record in this wave.)* For example, some data records for Wave #4 may note under RELATED HISTORICAL INFORMATION that the Great Depression of the 1930s slowed immigration from all parts of the globe.
- If this wave could be described in a sentence, what would it be?

Encourage students to combine the information they have collected on overall and wave-by-wave immigration into an "immigration time line." This time line could be constructed on a bulletin board or along a wall, charting the pattern of immigration to America and listing important worldwide and national events that affected immigration from 1831 to 1860.

Country of Origin: Have the student research teams select and print out the five data records they each contributed to the data file. Ask each team to discuss the patterns of emigration from its chosen country of origin and prepare a brief report to the class on the conclusions. Encourage each team to include a short general history of the country as well as a map or other illustration.

EXTENSION ACTIVITIES

Additional countries of origin. Once they have laid the foundations for the immigration data file as described above, your students may be eager to add records for countries not yet covered — especially for those countries to which their own families may have ties. Encourage kids to use the *Statistical Yearbook of the Immigration and Naturalization Service,* the *World Almanac,* and other reference sources to complete a set of five data records for as many additional countries of origin as they choose.

Immigration to your state or city. Using the *Statistical Yearbook* and your own local history resources, encourage students to find out and report back to the class which waves of immigrants from which countries of origin played an important part in the development of your local area. You might help them compile statistical charts similar to those in this teaching unit, and/or modify the immigration data file to indicate the "local connection" for those countries and waves involved.

Genealogy reports. Have students do research at home and among their relatives to find out when and why their own ancestors emigrated to America. Which wave or waves were they part of? What do their stories add to the class's understanding of the immigrant experience? ■

Written by: ***Beverly Hunter,*** president of Targeted Learning Corporation and author of *My Students Use Computers* (Reston, 1984); with ***Joseph Glacken*** of the Montgomery County Intermediate Unit, and ***Patrice Webb*** who teaches third grade in a suburban Philadelphia public school system.

Edited by: ***Jackie Glasthal,*** Associate Editor, *Teaching and Computers,* and ***Mickey Revenaugh,*** Senior Editor, *Teaching and Computers.*

Library of Congress

CHART #1: THE BIG PICTURE

Wave Period	Number of Immigrants
1. (1831–1860)	4,910,590
2. (1861–1890)	10,373,628
3. (1891–1930)	22,325,970
4. (1931–1950)	1,563,470
5. (1951–1980)	10,330,470

This chart shows the total number of newcomers arriving in America during each of the five major waves of immigration.

CHART #2: FROM AROUND THE WORLD WE CAME

COUNTRY	*Wave #1 (1831-1860)*	*Wave #2 (1861-1890)*	*Wave #3 (1891-1930)*	*Wave #4 (1931-1950)*	*Wave #5 (1951-1980)*
Germany	1,538,747	2,958,620	1,402,797	340,636	742,975
England	286,828	1,304,663	1,012,107	134,008	331,433
Ireland*	1,902,219	1,528,131	1,094,253	40,670	109,257
Norway/Sweden	36,035	888,905	1,088,569	29,465	87,704
Italy	13,354	374,793	4,262,609	125,689	528,970
U.S.S.R.	1,285	255,078	3,085,539	1,904	42,097
Greece	96	2,590	418,783	18,092	225,946
Austria-Hungary	NA	434,488	3,697,863	39,753	145,793
Poland**	1,638	66,803	329,267	24,597	100,758
Portugal	2,434	33,718	216,383	10,752	197,363
Spain	13,632	16,382	134,235	6,156	91,694
Africa***	319	1,527	22,447	9,117	123,825
Japan	NA	2,605	273,038	3,503	136,013
China	41,440	249,213	86,589	21,637	168,747
Korea	NA	NA	NA	NA	308,395
Mexico****	12,948	9,266	728,904	82,908	1,394,042
Cuba	NA	NA	NA	NA	552,347
El Salvador	NA	NA	NA	NA	55,323
Vietnam/Laos/ Cambodia	NA	NA	NA	NA	207,558
Philippines	NA	NA	NA	NA	472,670

This chart shows the number of immigrants that came to America during each of the five waves from selected countries and regions of the world.

***Ireland:** From 1831 to 1925, statistics for Northern Ireland are included.
****Poland:** From 1899 to 1919, statistics for Poland are included with those for Austria-Hungary, Germany, and U.S.S.R. Statistics for Wave #3 may, for this reason, be understated.
*****Africa:** Note that statistics related to forced immigration (slavery) are not represented in these figures.
******Mexico:** No data is available regarding immigration from Mexico for the period 1886 to 1893. This affects statistics in Waves #2 and #3.

Source: *1984 Statistical Yearbook of the Immigration and Naturalization Service*

WRITE A Fantasy

BY LORRAINE HOPPING

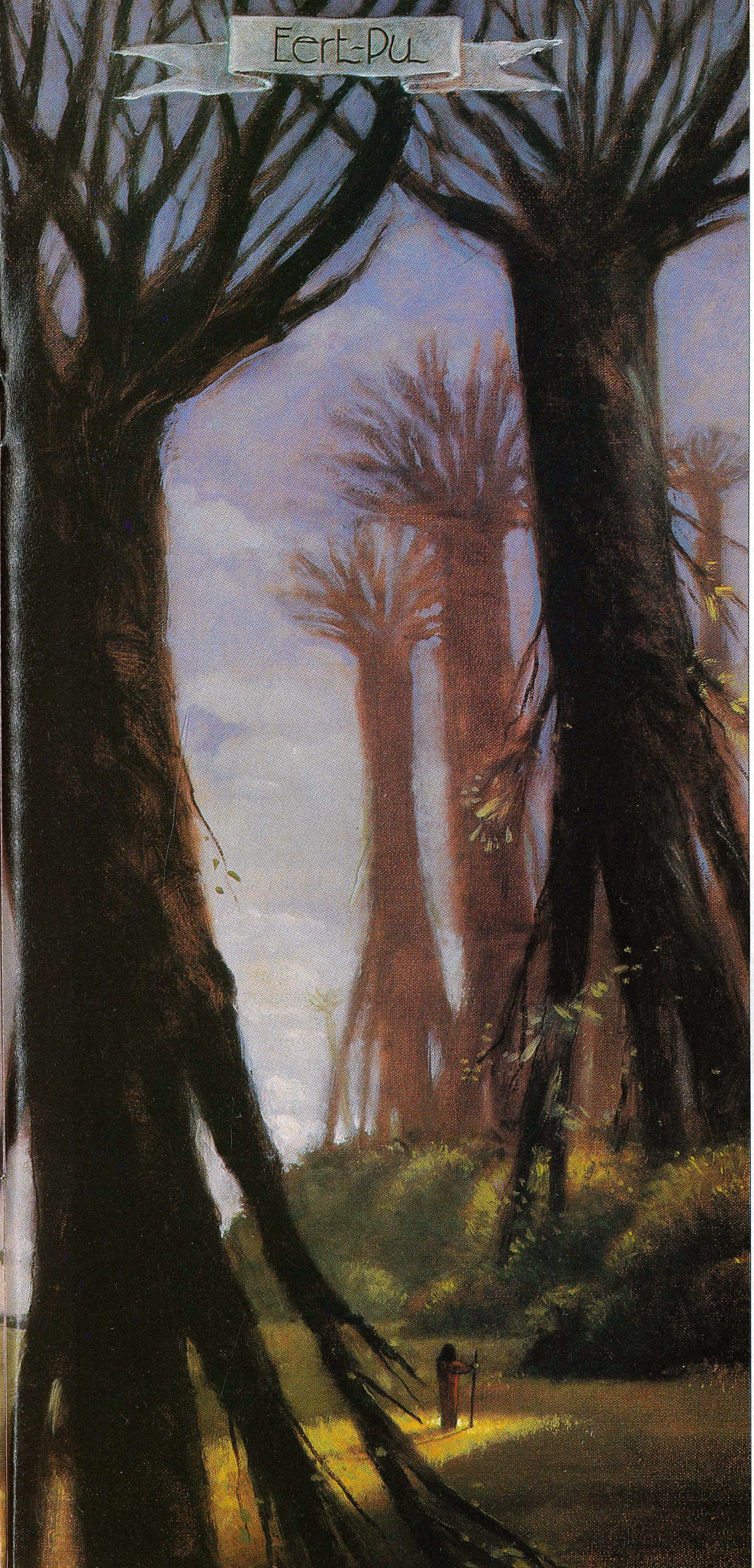
With a little imagination—and the help of a BASIC program called Fantasy Writer—kids can be the heroes of their own tales of enchantment!

When you open a volume of fantasy fiction, you open the door to an enchanted world, where children of all ages can fly with fairies, hobnob with hobbits, and embark on elfin expeditions. Perhaps that's why bookstores today are full of these tales of imaginary adventure — and why kids are among the most avid readers of fantasy fiction.

Your students are probably familiar with J.R.R. Tolkein's book, *The Hobbit*, and his Lord of the Rings trilogy. They might also have read fantasy fiction by C.S. Lewis, John Christopher, and Zilpha Keatley Snyder. (A more detailed reading list is provided on page 31.)

As different as these and other fantasy works are from one another, they share certain common elements. For example, they all feature an array of fantastical creatures, landscapes, plants, and objects conjured up by the author's imagination. Most make a sharp distinction between good and evil characters. And their plots generally revolve around an adventurous quest undertaken by a good and brave (but not necessarily human) protagonist.

Such literary elements may remind your students of science fiction like *Star Wars* as well as fantasy fiction like *The Hobbit*. There is good reason for this. Science fiction and fantasy fiction are closely related. The primary difference is that while things can happen through pure *magic* in fantasy fiction, science fiction offers a scientific or technological explanation — however imaginary. Much of science fiction is set in the future or in space, while fantasy fiction often unfolds "long ago and far away" with little connection to Planet Earth and the



Bart Goldman

human race as we know it.

Reading fantasy stories is indeed a treat for the imagination; but writing them is an absolute *feast*! In this creative writing unit, students use a BASIC program called *Fantasy Writer* (listed on page 33) to develop their own fantasy tales, complete with imaginary creatures, a fantastical setting, and a perilous quest worthy of the most courageous heroes: themselves!

The unit also includes warm-up activities that introduce the elements of fantasy fiction and instructions on how to use the Write a Fantasy Worksheet that accompanies the program listing.

INTRODUCING FANTASY FICTION

Explain to students that a *fantasy* is something that occurs only in someone's imagination and not in real life. The dreams we have at night are fantasies of a sort; so, too, are the daydreams we have when we're awake.

Writing fantasy fiction often begins with dreaming up characters, events, landscapes, and objects that are said to be *fantastical*, or not of the real world. Through the following activities, your students pool their imaginative resources to come up with an "idea bank" of these basic elements for fantasy fiction. The exercises are a good way to put students in a fantastical state of mind.

Out of This World

The first step is to brainstorm fantastical settings. Some examples to get your students thinking: the Yellow Brick Road leading to the Emerald City in *The Wizard of Oz* (remember the evil apple trees that try to grab Toto, the poppies that put Dorothy and her friends to sleep, and the magic green glow of the faraway city itself?); Alice's Wonderland (where every door leads someplace curiouser and curiouser); Never-Never-land (where no one, including Peter Pan, ever grows up); Eldorado (a city made of gold).

Ask students to think up suitable names for a fantasy world. List them on the chalkboard. Then choose several examples from the list and ask students to think out loud about what a fantasy world with each of those names would look like. Encourage students to be as specific as possible

(continued)

when describing these fantasy worlds. For example, a world called Eert-Pu ("tree-up" spelled backwards) might have upside-down trees. The tops of the trees might be "Root Gardens" filled with strange-looking birds called "Rootpeckers." The bottoms of the trees, which would be mostly underground, might house "Leafers," imaginary insects that produce and maintain tree leaves.

Forces of Good and Evil

In most fantasy fiction, the cast of fantastical characters is clearly divided up into "good guys" (including the *protagonist*, or hero, and his or her helpers) and "bad guys" (including the villain and his or her helpers). These characters can be humans (or similar to humans, like hobbits or elves), animals (like unicorns), or totally made-up creatures (like E.T.).

Ask your students to think about the kinds of good characters they might create for a fantasy story. Have them suggest some traits these good characters might have (such as bravery, kindness, or loyalty) and list these on the board. What special strengths or magical powers might they have? What about weaknesses, such as small physical size? What might these creatures be called? List all these descriptions on the board.

Most fantasy stories also have bad or evil characters. Like the good characters, they have strengths and weaknesses. Have your students discuss what evil creatures in a fantasy story might look like, how they might act, and what they might be called. Encourage your class to come up with as many varieties of "bad guys" as they did "good guys" — it will make their fantasy world that much more interesting! List all of their suggestions on the board.

Quest for a Plot

Next, explain to students that the plot of a fantasy story usually involves a *quest*. A quest is an adventurous journey in search of something. For example, medieval knights went on quests in search of evil dragons to slay. In fantasy stories, the search is often for an object, such as a golden key that unlocks a great secret, or a magic ring that endows its wearer with special powers. Brainstorm for a list of objects worthy of a great quest. Then ask students to imagine what will happen when the object is found and the quest is fulfilled. Will magical changes come over the landscape? Will the evil characters be banished from the land and the good ones freed to live happily ever after? Encourage students to provide a lot of creative details.

WORKING THE WORKSHEET

Your students should now be in a sufficiently fantastical state of mind to tackle the *Fantasy Writer* worksheet and computer program, which ask them to help complete a partially-written fantasy story.

Copy and distribute the Write a Fantasy Worksheet on page 32, instructing students to draw on the class idea bank and their own imaginations for answers to all the questions.

The worksheet begins by asking students to pick a name for a fantasy land, then identify one feature of the landscape that makes it unlike anything on earth. For example, a land called "Eert-pu," in addition to upside-down trees, might have purple clouds or three-inch-high mountains.

Next, the worksheet describes two kinds of good characters — a powerful wizard and a race of big-eyed little creatures — and asks students to provide them with names. For example, one student might decide that the big-eyed creatures are so tiny and timid that they should only travel in groups, earning them the name "Grouplings." Another might think the wizard sounds like his big, wise Uncle Melvin, and so calls him "Mel."

The worksheet then asks students to name an object worthy of a fantasy quest, and describe in a sentence what will happen when the hero finds this object and fulfills the quest. For example, the student imagining Eert-pu might choose a silver bird's nest as the object of the quest, and imagines that the trees in Eert-pu will turn right-side up when the silver nest is found.

Finally, students are asked to think up a name for the evil characters in this story, and write a sentence explaining what makes them so evil. The student who's dreaming up Eert-pu, for example, may decide to call the evil creatures "Smedlies" just because the name sounds mean. Since trees are so important in Eert-pu, the Smedlies will show they're the bad guys by eating innocent trees whole and spitting out the leaves.

USING THE FANTASY WRITER PROGRAM

Once they have completed their worksheets, have your students sit down individually at the computer to interact with the *Fantasy Writer* program.

The first question *Fantasy Writer* asks is the student's name. The rest of the program's first section then follows the pattern of the worksheet, prompting the student to enter worksheet answers in response to questions posed in the context of a fantasy story. For example, when the screen reads, "You are in a strange world. It is like no place on earth. What is this world called?" students should enter the fantasy land name they chose for the first section of the worksheet. (Special note: Tell your students not to use any commas in their answers because the computer interprets commas as special programming signals!) *Fantasy Writer* asks students to input nine pieces of information.

Once these *Fantasy Writer* questions have been answered, the student's name and answers are integrated into a prewritten text to create a customized fantasy tale that the student can read on the screen or print out. In the story, the student becomes the hero. An example of a story created using *Fantasy Writer* is on page 31.

After the children finish reading through or printing their individual stories, they can choose either to end the program or start it over. Note that students' stories are not stored permanently. Once the computer is turned off or another student elects to enter his or her story, the details of the first child's story are erased.

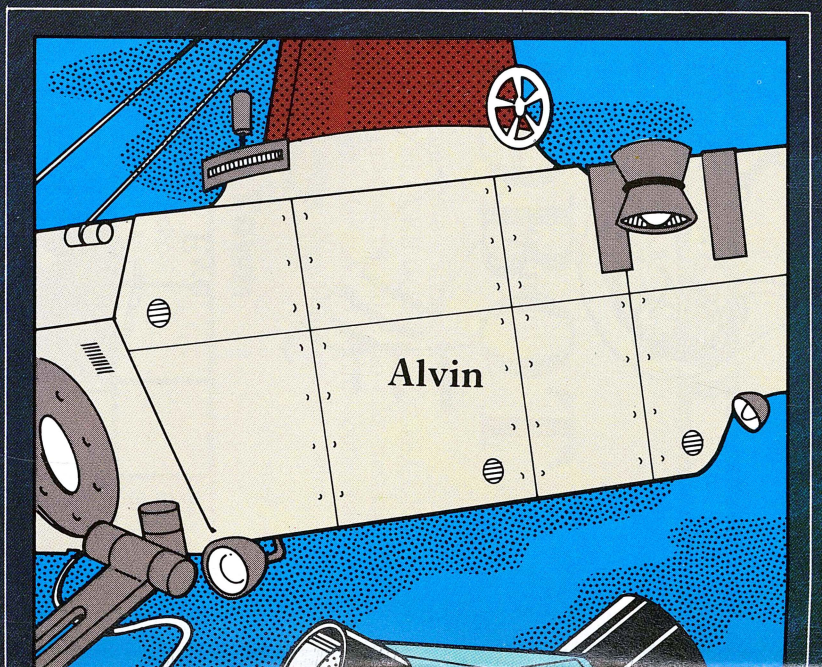
You might want to encourage advanced students to develop the characters and plots in their stories more thoroughly on paper. They can use the *Fantasy Writer* printout as a rough draft and add details, background information, or even more adventurous episodes to fill out the tale.

Challenge experienced programmers in your class to change the program so that it helps users write a different kind of story — maybe a science fiction or mystery story.

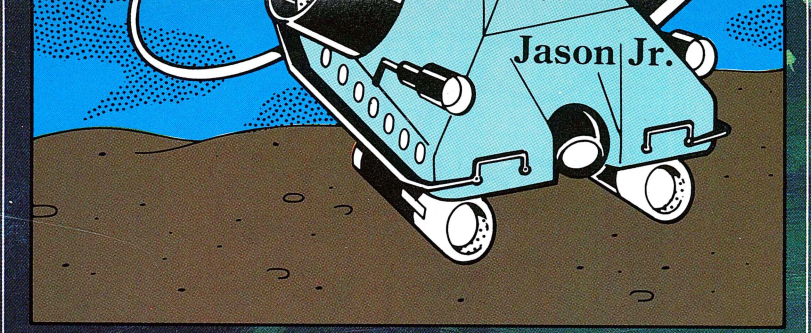
THE Swimming Eyeball

What is the "Swimming Eyeball"? It's a underwater ROBOT! It is really name Jason Jr., but scientists call it a swim ming eyeball because it uses cameras t "see" into underwater places where hu mans cannot go.

Jason Jr. is famous for taking some o the first pictures of the shipwrecked *Ti tanic* in July of 1986. That's Jason Jr exploring the *Titanic* in the picture be low! Jason Jr. had to "swim" 12,500 fee below the surface of the ocean to reac the *Titanic*. But Jason wasn't alone dow there. The robot was connected by



Jason Jr. and one of the scientists it works with.



Jason Jr. is connected by cable to a submarine named Alvin.

Diagram by Philip Scheuer
Photo by Steve Liss/Time Magazine
Poster art by Joel Naprstek
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JFN
'88

COPY

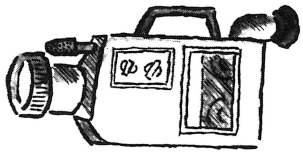
PRIMARY

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: _____

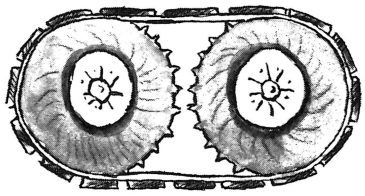
ROBOT PARTS

DIRECTIONS: Robots have parts that do jobs just like our body parts do. Draw a line from the robot part to the body part that is most like it.

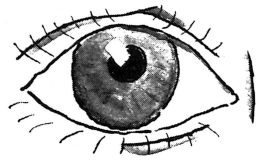


Camera

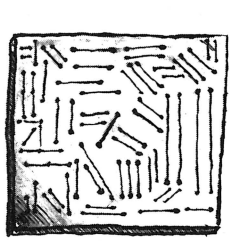
Feet



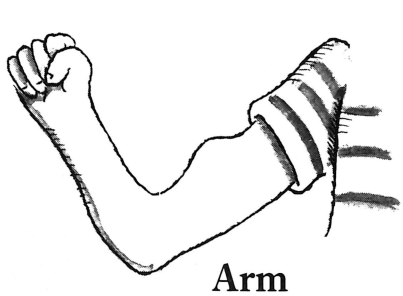
Wheels



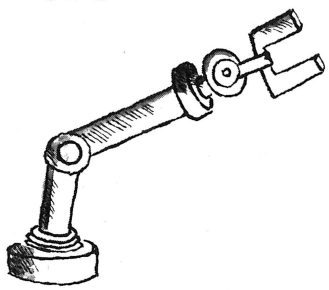
Eye



CPU



Arm



Mechanical arm

Brain

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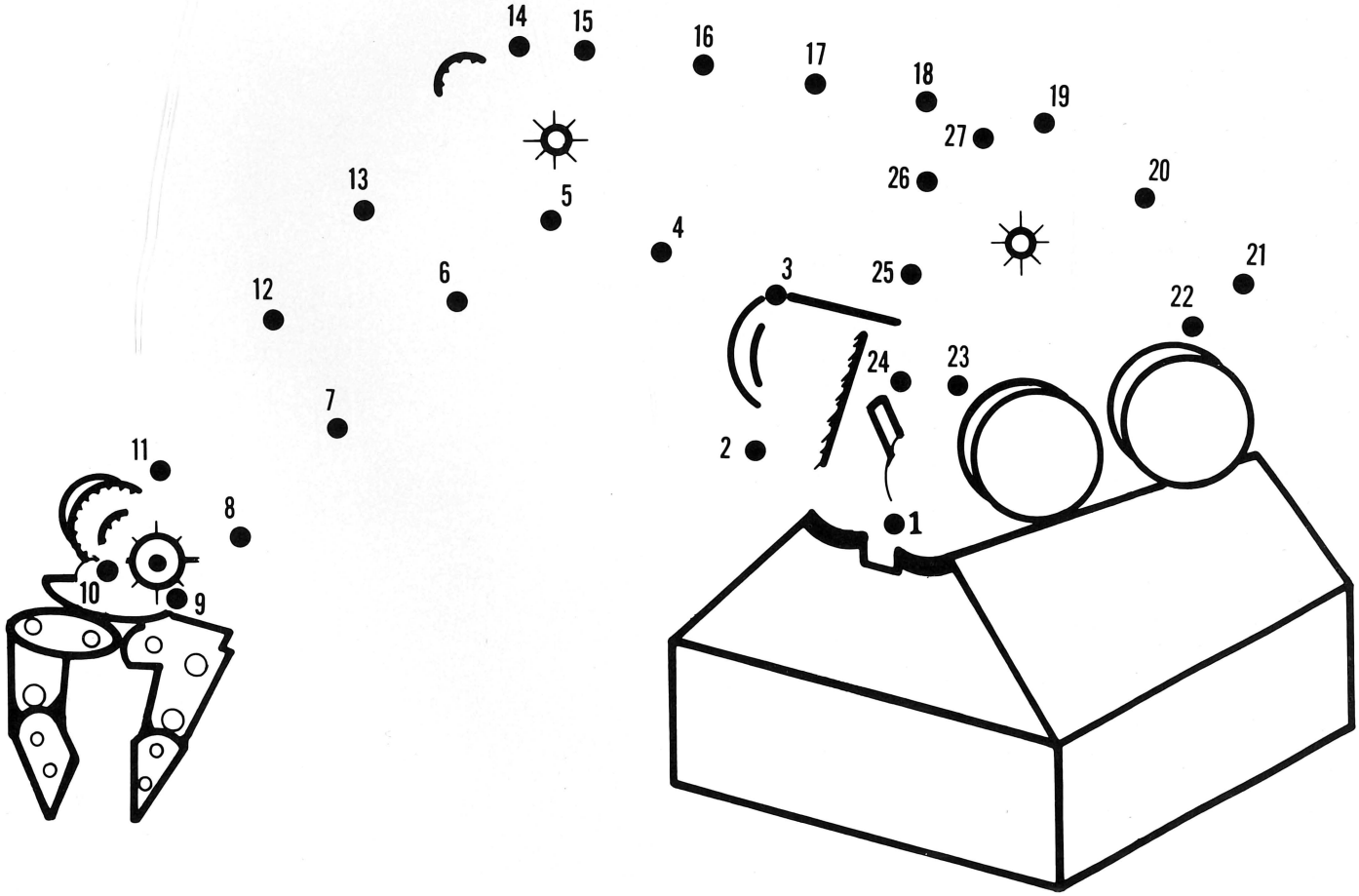
NAME: _____

CONNECT THE DOTS

DIRECTIONS: Some robots are made to lift things. Connect the dots to see what one of these robots might look like.



FILL IN THE BLANKS:
The robot looks like my _____ _____ _____.

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COPY

INTERMEDIATE

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: _____

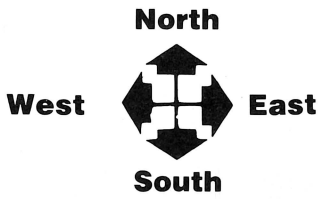
SPEED E. ROBOT

DIRECTIONS: Speed E. Robot is a messenger. He takes letters and packages from place to place — super fast. But Speed E. can't find these places by himself; he needs a programmer to tell him where to make deliveries.

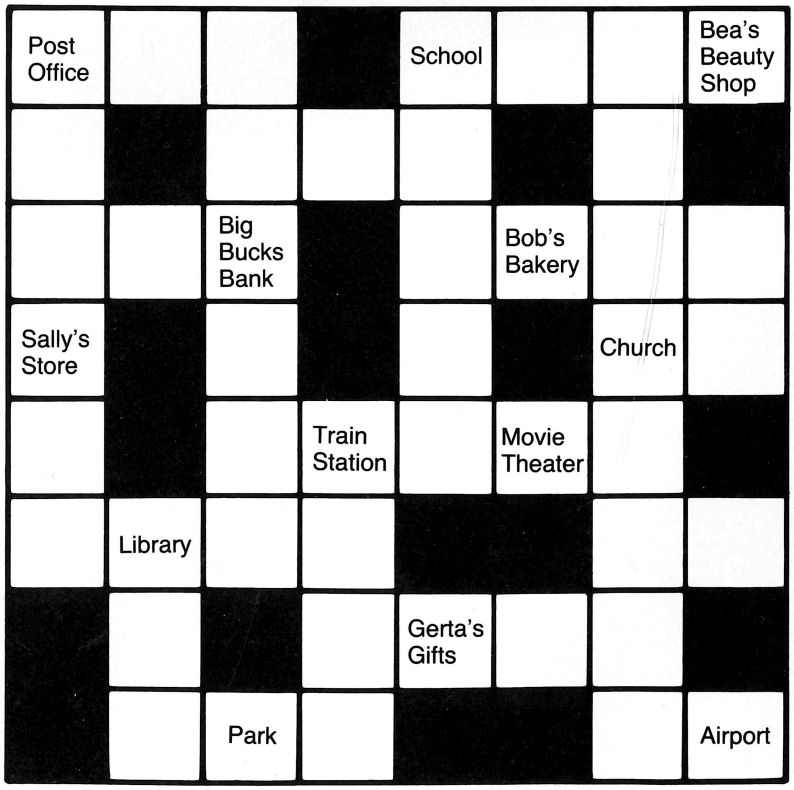
Right now, Speed E. is at the post office. One way to make him take a letter from the post office to Big Bucks Bank is to give him these commands.:

GO EAST 2 BLOCKS GO SOUTH 2 BLOCKS

Your job is to program Speed E. to take messages all around Chip Town. He can go north, south, east, or west. He cannot move diagonally and he cannot cross over the dark squares.



Chip Town



1. Write commands for Speed E. to go from Big Bucks Bank to Gerta's Gifts.

_____

_____

_____

_____

2. Write commands for Speed E. to go from Gerta's Gifts to Bob's Bakery, without passing through the train station.

_____

_____

_____

3. Write commands for Speed E. to go from Bob's Bakery to Bea's Beauty Shop and back again.

_____

_____

_____

_____

_____

4. Write commands for Speed E. to go from Bob's Bakery to Sally's Store. He should pass through the train station, but not the library.

_____

_____

_____

_____

_____

_____

BONUS: Someone else gave Speed E. these commands: GO NORTH 3 BLOCKS, GO EAST 2 BLOCKS, GO SOUTH 5 BLOCKS, GO EAST 1 BLOCK, GO SOUTH 2 BLOCKS, GO WEST 1 BLOCK. If Speed E. starts at Sally's Store, where will he end up?

_____

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COPY

INTERMEDIATE

WORKSHEET TO COPY AND USE WITH THIS MONTH'S POSTER

NAME: _____

WHAT'S YOUR ROBOT I.Q.?

DIRECTIONS: Are you "smarter" than the average robot user? Take this quiz and find out! In the blanks provided, answer true or false for each question.

True or False:

_____ 1. Only scientists can build robots.

_____ 2. Robots can think on their own.

_____ 3. Transformers and Go-Bots are real robots.

_____ 4. Some robots can see where they're going.

_____ 5. Robots are controlled by computers.

_____ 6. All robots must be kept dry.

_____ 7. Most modern robots are used to perform simple jobs in factories.

_____ 8. All robots have arms, legs, and heads like humans.

_____ 9. Robots are afraid of dangerous jobs.

_____ 10. Some robots can be hooked up to personal computers.

SCORE
1-3 correct: Check your circuits and take the quiz again.
4-6 correct: Not bad, but you could use a robot tutor.
7-9 correct: Great! You really know your robots.
10 correct: You're a ROBO-GENIUS!

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FANTASY FICTION READING LIST

The classic works of fantasy fiction listed below will offer your students a sampling of many diverse "worlds of imagination." Most of these books are readily available at your local library and in bookstores.

- The Chronicles of Narnia (a series of seven books) by C.S. Lewis: MacMillan Publishing Co., 866 Third Ave., New York, NY 10022. Individual titles include: *The Lion, the Witch, and the Wardrobe; Prince Caspian; The Voyage of the Dawn Treader; The Silver Chair; The Horse and His Boy; The Magician's Nephew;* and *The Last Battle.*
- *Come Follow Me. . .to the Secret World of Elves and Fairies and Gnomes and Trolls* by Gyo Fujikawa: Grosset & Dunlap, 51 Madison Ave., New York, NY 10010.
- *The Dream Child* by David McPhail: E.P. Dutton, 2 Park Ave., New York, NY 10016.
- The Green-Sky Trilogy by Zilpha Keatley Snyder: Tom Doherty Assoc., 8-10 W. 36th St., New York, NY 10018. Individual titles include *Below the Root, And All Between,* and *Until the Celebration.*
- *The Guardians* and other books by John Christopher: MacMillan Publishing Co., 866 Third Ave., New York, NY 10022.
- *The Hobbit* and The Lord of the Rings Trilogy by J.R.R. Tolkein: Ballantine Books, Random House, 201 E. 50th St., New York, NY 10022. Individual titles of the trilogy include *The Fellowship of the Ring, The Two Towers,* and *The Return of the King.*
- *The Magic Castle* by Stella Farris: Harper & Row, Keystone Industrial Park, Scranton, PA 18512.
- *The Princess and Curdie* by George McDonald: Penguin Books, William Morrow and Co., 40 West 23rd St., New York, NY 10010.
- *The Rainforest Children* by Margaret Pittaway: Oxford University Press, 16-00 Pollitt Drive, Fair Lawn, NJ 07410.
- *The Sword in the Stone* by T.H. White: Dell Publishing Co., 1 Dag Hammarskjold Plaza, New York, NY 10017.
- *The Wizard of Oz* and other books in the Oz series by Frank L. Baum: various editions available from several publishers. ■

(See the program listing and worksheet on the following pages.)

Eert-Pu

A FANTASY STORY WRITTEN BY ELLEN MEYERS

LET ME INTRODUCE MYSELF. I MIGHT SEEM STRANGE TO YOU, FOR I HAVE ONLY TWO EYES, TWO ARMS, AND TWO LEGS. THEY CALL ME A 'HUMAN.' MY NAME IS ELLEN MEYERS.

HUMANS ARE VERY RARE IN EERT-PU. IN FACT, I MAY BE THE ONLY ONE. PERHAPS THAT IS WHY I WAS CHOSEN TO UNDERTAKE THE WIZARD'S QUEST.

LET ME EXPLAIN. . . .

A GREAT WIZARD NAMED MEL BROUGHT ME HERE TO EERT-PU.

HE SAID THAT HE AND HIS FRIENDS, THE GROUPLINGS, NEEDED MY HELP.

'ONLY YOU, ELLEN MEYERS, CAN FIND THE MAGIC SILVER BIRD'S NEST,' MEL SAID. 'WHEN YOU DO, THE TREES IN EERT-PU WILL TURN RIGHT-SIDE UP.'

AT THAT POINT, THE GROUPLINGS LOOKED AT ME WITH THEIR BIG ORANGE EYES. HOW COULD I REFUSE THEM?

SO HERE I AM, TALKING TO YOU, PURPLE CLOUD. MEL SAID YOU COULD TELL ME WHERE TO FIND THE SILVER BIRD'S NEST.

THE PURPLE CLOUD SAID NOTHING FOR A MOMENT.

I TURNED TO THE GROUPLINGS AND SAID, 'YOU TOLD ME THE PURPLE CLOUD COULD TALK. . . .'

THE GROUPLINGS GIGGLED. THEY SAID, 'EVERYONE KNOWS YOU MUST TALK BACKWARDS TO THE PURPLE CLOUD.'

I LOOKED AT THE PURPLE CLOUD AND EXPLAINED MY QUEST AGAIN, THIS TIME BACKWARDS.

THE PURPLE CLOUD REPLIED: 'LOOK NORTH 100 MILES. YOU WILL SEE AN UPSIDE DOWN TREE. THE ROOTS OF THE TREE WILL BE SHAPED LIKE THE OBJECT YOU SEEK.'

'BUT I CAN'T SEE 100 MILES AWAY,' I SAID TO THE PURPLE CLOUD.

'WE CAN! WE CAN!' SHOUTED THE GROUPLINGS.

QUICKLY, THE GROUPLINGS JUMPED ONE ON TOP OF ANOTHER UNTIL THEY FORMED A TALL TOTEM POLE. THE ONE AT THE TOP FACED NORTH AND OPENED ITS BIG EYES VERY WIDE.

'I SEE! I SEE!' IT CRIED, 'THE TREE!'

THE OTHER GROUPLINGS SAID, 'YES! YES! A SILVER BIRD NEST'S TREE!'

JUST THEN, SMEDLIES SWOOPED DOWN FROM THE SKY.

I KNEW SMEDLIES WERE NOTHING BUT TROUBLE BECAUSE THE WIZARD SAID THAT THEY EAT INNOCENT TREES WHOLE AND THEN SPIT OUT THE LEAVES.

'WE WILL FIND THE SILVER BIRD'S NEST FIRST,' THE SMEDLIES SAID, 'BECAUSE WE CAN FLY ACROSS EERT-PU IN NO TIME.'

'NOW WHAT WILL WE DO?' I ASKED.

JUST THEN, MEL THE WIZARD APPEARED. 'SHOW ME THE TREE,' HE SAID, 'AND I WILL SEND YOU THERE.'

THE GROUPLINGS POINTED NORTH AND, WITH A WAVE OF THE WIZARD'S WAND, WE WERE THERE.

'HURRY! HURRY!' CRIED THE GROUPLINGS. 'THE SMEDLIES WILL SOON BE HERE!'

I CLIMBED THE SILVER BIRD'S NEST TREE QUICKLY. AT THE TOP, I FOUND A NOTE THAT READ: 'TO UNLOCK THE SECRET OF THE SILVER BIRD'S NEST TREE, A HUMAN BEING MUST SAY 'THERE'S NO PLACE LIKE EERT-PU' THREE TIMES BACKWARDS.'

I SAID 'EERT-PU LIKE PLACE NO THERE'S, EERT-PU LIKE PLACE NO THERE'S, EERT-PU LIKE PLACE NO. . .'

THE SMEDLIES SWOOPED DOWN, BUT BEFORE THEY COULD GRAB ME I FINISHED THE BACKWARDS SENTENCE — 'THERE'S!'

THE SMEDLIES SCREAMED AND A SILVER BIRD'S NEST TOOK THEIR PLACE. 'VERY SOON,' SAID THE WIZARD, 'THE TREES IN EERT-PU WILL TURN RIGHT-SIDE UP.'

THE END

This story was created using the Fantasy Writer *program listed on page 33.*

COPY

WRITE A Fantasy

WORKSHEET

NAME: _____ DATE: _____

DIRECTIONS: This worksheet will help you think of a setting, good and evil characters, and a plot for a fantasy story. Read each question carefully and write the answers in the blanks provided.

SETTING

1. Fantasy stories take place in a world that does not exist on earth. Think of a name for a fantasy world and write it in the blank.

_____

2. What makes your fantasy world fantastical? Does it have special un-earthly features like upside down trees or three-inch high mountains? Name one object in your fantasy world that cannot be found on earth. Include an adjective that describes the object.

_____

GOOD CHARACTERS

1. Suppose that, in your fantasy world, there are tiny creatures with very big eyes. They are helpful creatures because they can see clearly for 100 miles. What would you call these creatures?

_____

2. Also suppose that a wizard lives in your fantasy world. He has magical powers that allow him to transport people or objects from one place to another. What is his name?

_____

THE PLOT

1. In most fantasy stories, the main character sets off on a *quest.* A quest is an adventurous journey in search of something. What object is the main character in your story searching for? _____

_____

2. What will happen when he or she finds this object? (Write a complete sentence.) _____

_____

EVIL CHARACTERS

1. Succeeding in the quest can't be too easy. Usually, there are evil characters who try to stop the main character. What are your evil characters called?

_____

2. What do they do that's so evil? (Write a complete sentence.) _____

_____

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Write a Fantasy

PROGRAM LISTING FOR FANTASY WRITER

This program listing is written for the Apple II series of computers. For instructions on adapting the program for use on other brands of computers, see "Teacher's Helper," page 52. A printer is optional.

```
10 REM FANTASY WRITER COPYRIGHT 1987 BY SCHOLASTIC INC.
20 HOME
30 PRINT TAB(6);"WELCOME TO FANTASY WRITER!":PRINT
40 PRINT "  THIS PROGRAM WILL HELP YOU WRITE YOUR"
50 PRINT "OWN FANTASY STORY!"
60 PRINT:PRINT "  WHAT IS YOUR NAME";
70 INPUT AU$:IF AU$="" THEN 60
80 PRINT:PRINT "  IS ";AU$;" SPELLED CORRECTLY (Y/N)?";
90 GOSUB 2000:IF K$<>"Y" AND K$<>"N" THEN 90
100 HOME:IF K$="N" THEN 60
110 PRINT "  YOU ARE IN A STRANGE WORLD. IT IS"
120 PRINT "LIKE NO PLACE ON EARTH."
130 PRINT:PRINT "  WHAT IS THIS WORLD CALLED";
140 INPUT WO$:IF WO$="" OR LEN(WO$)>39 THEN 130
150 PRINT:PRINT "  YOU CAN TELL THAT ";WO$;" IS"
160 PRINT "LIKE NO PLACE ON EARTH BECAUSE THE"
170 PRINT "TREES ARE UPSIDE DOWN. WHAT OTHER"
180 PRINT "OBJECT DO YOU SEE THAT IS TOO WEIRD TO"
190 PRINT "BE FOUND ON EARTH";
200 INPUT OB$:IF OB$="" THEN 150
210 REM STRIP OFF ARTICLE
220 IF MID$(OB$,2,1)=CHR$(32) THEN OB$=MID$(OB$,3)
230 IF MID$(OB$,3,1)=CHR$(32) THEN OB$=MID$(OB$,4)
240 GOSUB 3000
250 PRINT "  YOU CLIMB A TREE FOR A BETTER VIEW."
260 PRINT:PRINT "  SAFELY PERCHED ON A ROOT, YOU SPOT"
270 PRINT "SOMETHING MOVING IN THE DISTANCE. IT"
280 PRINT "IS A CIRCLE OF TINY CREATURES WITH"
290 PRINT "BIG EYES."
300 PRINT:PRINT "  WHAT ARE THE CREATURES CALLED";
310 INPUT CR$:IF CR$="" THEN 300
320 PRINT:PRINT "IN THE CENTER OF THE CIRCLE STANDS A"
330 PRINT "VERY TALL WIZARD. HE LOOKS IN YOUR"
340 PRINT "DIRECTION AND WAVES HIS WAND. THE NEXT"
350 PRINT "THING YOU KNOW, YOU ARE STANDING NEXT"
360 PRINT "TO HIM. HE TELLS YOU HIS NAME."
370 PRINT:PRINT "  WHAT IS IT";
380 INPUT WI$:IF WI$="" THEN 370
390 GOSUB 3000
400 PRINT "  ";WI$;" SAYS, 'HELLO, ";AU$;". I"
410 PRINT "BROUGHT YOU HERE SO THAT YOU COULD"
420 PRINT "HELP ME AND MY PALS, THE ";CR$;".'"
430 PRINT:PRINT "  'HOW?' YOU ASK."
440 PRINT:PRINT "  'YOU MUST FIND A MAGIC OBJECT,'"
450 PRINT "EXPLAINS THE WIZARD. 'IT IS HIDDEN"
460 PRINT "SOMEWHERE IN ";WO$;".'"
470 PRINT:PRINT "  ";WI$;" WHISPERS THE NAME OF THE"
480 PRINT "OBJECT IN YOUR EAR."
490 PRINT:PRINT "  WHAT IS IT";
500 INPUT MO$:IF MO$="" THEN 490
510 IF MID$(MO$,2,1)=CHR$(32) THEN MO$=MID$(MO$,3)
520 IF MID$(MO$,3,1)=CHR$(32) THEN MO$=MID$(MO$,4)
530 GOSUB 3000:PRINT "  ";WI$;" SAYS, 'FIND THE ";OB$
540 PRINT "AND YOU SHALL SOON FIND THE ";MO$;"."
550 PRINT "IF YOU SUCCEED, A GREAT THING WILL"
560 PRINT "HAPPEN.'"
570 PRINT:PRINT"WHAT DO YOU THINK WILL HAPPEN? (ENTER"
580 PRINT "A FULL SENTENCE. DON'T USE A COMMA.)"
590 INPUT HA$:IF HA$="" THEN 570
600 GOSUB 3000
610 PRINT "  ";WI$;" LEANS CLOSE. 'ALWAYS BEWARE,"
620 PRINT "MY FRIEND, OF THE EVIL CREATURES.'"
630 PRINT:PRINT "  WHAT ARE THESE EVIL CREATURES"
640 PRINT "CALLED";:INPUT EV$:IF EV$="" THEN 630
650 PRINT:PRINT "  WHAT MAKES THEM SO EVIL? (ENTER A"
660 PRINT "FULL SENTENCE. DON'T USE A COMMA.)";
670 INPUT SE$:IF SE$="" THEN 650
680 PRINT:PRINT "  YOU AND THE ";CR$;" SET OFF"
690 PRINT "IN SEARCH OF THE ";MO$;" ...":GOSUB 3000
700 REM PRINT OUT OR DISPLAY STORY?
710 PRINT "  IT IS NOW TIME TO READ WHAT HAPPENS"
720 PRINT "ON THE QUEST.":PRINT
730 PRINT "  WHAT WOULD YOU LIKE TO DO?":PRINT
740 PRINT "  1. DISPLAY THE STORY ON THE SCREEN."
750 PRINT:PRINT "  2. PRINT OUT THE STORY ON PAPER."
760 PRINT:PRINT "  PLEASE PRESS <1> OR <2>.";
770 GOSUB 2000:IF K$<>"1" AND K$<>"2" THEN 770
780 C$=K$:IF C$="1" THEN 880
790 REM GET PRINTER READY
800 HOME:PRINT "  MAKE SURE YOUR PRINTER IS TURNED ON"
810 PRINT "AND THE PAPER IS IN PLACE.":PRINT
820 PRINT "  PRESS <Y> TO BEGIN PRINTING.":PRINT
830 PRINT "  PRESS <N> IF YOU DON'T WANT TO PRINT"
840 PRINT "OUT THE STORY AFTER ALL."
850 GOSUB 2000:IF K$<>"Y" AND K$<>"N" THEN 850
860 IF K$="N" THEN K$="1":GOTO 780
870 PRINT:PRINT CHR$(4);"PR# 1"
880 REM PRINT OUT OR DISPLAY STORY
890 HOME:PRINT TAB((40-LEN(WO$))/2);WO$:PRINT
900 PRINT:PRINT "  A FANTASY STORY WRITTEN BY ";AU$
910 PRINT:GOSUB 4000
920 PRINT "  LET ME INTRODUCE MYSELF. I MIGHT SEEM"
930 PRINT "STRANGE TO YOU, BECAUSE I HAVE ONLY TWO"
940 PRINT "EYES, TWO ARMS, AND TWO LEGS. THEY CALL"
950 PRINT "ME A 'HUMAN.' MY NAME IS ";AU$;"."
960 PRINT:PRINT "  HUMANS ARE VERY RARE IN ";WO$;"."
970 PRINT "IN FACT, I MAY BE THE ONLY ONE. PERHAPS"
980 PRINT "THAT IS WHY I WAS CHOSEN TO UNDERTAKE"
990 PRINT "THE WIZARD'S QUEST.":PRINT
1000 PRINT "  LET ME EXPLAIN ...":GOSUB 4000
1010 PRINT "  A GREAT WIZARD NAMED ";WI$;" BROUGHT"
1020 PRINT "ME HERE TO ";WO$;"."
1030 PRINT:PRINT "  HE SAID THAT HE AND HIS FRIENDS,"
1040 PRINT "THE ";CR$;", NEEDED MY HELP."
1050 PRINT:PRINT "  'ONLY YOU, ";AU$;", CAN FIND THE"
1060 PRINT "MAGIC ";MO$;",' ";WI$;" SAID."
1070 PRINT "'WHEN YOU DO, ";HA$;"'"
1080 PRINT:PRINT "  AT THAT POINT, THE ";CR$;" LOOKED"
1090 PRINT "AT ME WITH THEIR BIG ORANGE EYES."
1100 PRINT "HOW COULD I REFUSE THEM?":GOSUB 4000
1110 PRINT "  SO HERE I AM, TALKING TO YOU,"
1120 PRINT OB$;". ";WI$;" SAID THAT YOU COULD"
1130 PRINT "TELL ME WHERE TO FIND THE ";MO$;"."
1140 PRINT:PRINT "  THE ";OB$;" SAID NOTHING FOR A"
1150 PRINT "MOMENT.":GOSUB 4000
1160 PRINT "  I TURNED TO THE ";CR$;" AND SAID,"
1170 PRINT "'YOU TOLD ME THE ";OB$;" COULD TALK...'"
1180 PRINT:PRINT "  THE ";CR$;" GIGGLED. THEY SAID,"
1190 PRINT "'EVERYONE KNOWS YOU MUST TALK BACKWARDS"
1200 PRINT "TO THE ";OB$;".'"
1210 PRINT:PRINT "  I LOOKED AT THE ";OB$;" AND"
1220 PRINT "EXPLAINED MY QUEST AGAIN, THIS TIME"
1230 PRINT "BACKWARDS.":GOSUB 4000
1240 PRINT "  THE ";OB$;" REPLIED: 'LOOK NORTH"
1250 PRINT "100 MILES. YOU WILL SEE AN UPSIDE DOWN"
1260 PRINT "TREE. THE ROOTS OF THE TREE WILL BE"
1270 PRINT "SHAPED LIKE THE OBJECT YOU SEEK.'"
1280 PRINT:PRINT "  'BUT I CAN'T SEE 100 MILES AWAY,'"
1290 PRINT "I SAID TO THE ";OB$;"."
1300 PRINT:PRINT "  'WE CAN! WE CAN!' SHOUTED THE"
1310 PRINT CR$;".":GOSUB 4000
1320 PRINT "  QUICKLY, THE ";CR$;" JUMPED ONE"
1330 PRINT "ON TOP OF THE OTHER UNTIL THEY FORMED A"
1340 PRINT "TALL TOTEM POLE. THE ONE AT THE TOP"
1350 PRINT "FACED NORTH AND OPENED ITS BIG EYES"
1360 PRINT "VERY WIDE.":PRINT
1370 PRINT "  'I SEE! I SEE!' IT CRIED. 'THE TREE!'"
1380 PRINT:PRINT "  THE OTHER ";CR$;" SAID, 'YES! YES!"
1390 PRINT "A ";MO$;" TREE!'":GOSUB 4000
1400 PRINT "  JUST THEN, ";EV$;" SWOOPED DOWN"
1410 PRINT "FROM THE SKY."
1420 PRINT:PRINT "  I KNEW ";EV$;" WERE NOTHING BUT"
1430 PRINT "TROUBLE BECAUSE THE WIZARD SAID THAT"
1440 PRINT SE$:GOSUB 4000
1450 PRINT "  'WE WILL FIND THE ";MO$;" FIRST,'"
1460 PRINT "THE ";EV$;" SAID, 'BECAUSE WE CAN"
1470 PRINT "FLY ACROSS ";WO$;" IN NO TIME.'"
1480 PRINT:PRINT "  'NOW WHAT WILL WE DO?' I ASKED."
1490 PRINT:PRINT "  JUST THEN, ";WI$;" THE WIZARD"
1500 PRINT "APPEARED. 'SHOW ME THE TREE,' HE SAID,"
1510 PRINT "'AND I WILL SEND YOU THERE.'"
1520 PRINT:PRINT "  THE ";CR$;" POINTED NORTH AND,"
1530 PRINT "WITH A WAVE OF THE WIZARD'S WAND, WE"
1540 PRINT "WERE THERE."
1550 PRINT:PRINT "  'HURRY!' CRIED THE ";CR$;"."
1560 PRINT "  'THE ";EV$;" WILL SOON BE HERE!'"
1570 GOSUB 4000
1580 PRINT "  I CLIMBED THE ";MO$;" TREE QUICKLY."
```

(continued on page 52)

WRITER'S CORNER

WORD PROCESSING TASK CARDS

Conflict and Resolution

TEACHER'S NOTES

Each month the "Writer's Corner" column supplies you with four student activity cards that provide practice with creative writing skills. A different element of creative writing is explored each month. This month, for example, we focus on developing story conflict and resolution.

Each column requires you to create a data file. You may want to save each file on the same diskette.

PREPARATION

1. Cut out and laminate the four task cards on the pages that follow.
2. Using a word processor, type the data file that appears on this page.
3. Save the file on a diskette under the file name CONFLICT.
4. Before you have your students use this month's creative writing task cards, you may first want to teach or review these terms: *conflict, resolution, versus, internal.*
5. Your students will also need to know how to INSERT and DELETE text using your word processing program.

TASK CARD ACTIVITIES

Task Card 1: Children read three story conflicts. They are asked to provide a possible resolution for each one. One possibility is given for the first conflict.

Task Card 2: Children are taught about conflicts between individuals *(person versus person).* Each child then writes a passage relating an original person versus person conflict.

Task Card 3: Children are taught about *person versus nature* conflicts. Each child then writes a passage relating an original person versus nature conflict.

Task Card 4: Children are taught about internal conflicts *(person versus self).* Each child then writes an original person versus self conflict. As a final exercise, children select one of the conflicts they have written and write a resolution for it. ■

BY JACKIE GLASTHAL

CONFLICT DATA FILE

SECTION #1:
DIRECTIONS: For each conflict given, suggest a possible resolution in the space provided. One possible answer is given for the first conflict. See if you can come up with another possibility.

1. CONFLICT: Bob and his brother Paul have just moved with their parents from a house in the country to an apartment in the city. All their lives they have had their own rooms. From now on, though, they will have to share one.

Just a few days after the move, Bob claims that Paul has been going through his belongings. "I can't find my baseball mitt anywhere,"he starts yelling one afternoon. "You must have taken it."

"I didn't touch your stupid mitt," Paul snaps. "Your side of the room is such a mess, I wouldn't be able to find your mitt if I wanted to."

RESOLUTION: Bob finds his baseball mitt at the bottom of a box of unpacked clothing. He tells Paul he is sorry. Then the boys agree to take turns cleaning the room. They promise to respect each other's property.

GIVE ANOTHER POSSIBLE RESOLUTION HERE:

2. CONFLICT: While on a camping trip with three friends, Dave somehow gets lost from his group. All his equipment is with his friends, and it is growing dark. Dave will have to spend the night alone in the woods.

"I have been a Boy Scout a long time," he tells himself with courage. "I am not afraid."

As soon as he finds a spot to camp, Dave digs a hole for his shelter. As he settles into the hole, he hears rustling noises close by. His courage quickly fades. He wonders what he will do if it's a bear.

GIVE A POSSIBLE RESOLUTION HERE:

3. CONFLICT: For the third time in a week, Anna's mom asks Anna to come home after school and babysit her little brother while she is at work. Anna agrees but is not happy about it.

"It's not fair," Anna thinks. "I know mom has to work hard, but I'm just a kid. I need time with my friends. If mom would hire a babysitter once in a while, I would be happy. But I know she doesn't want to spend the money."

GIVE A POSSIBLE RESOLUTION HERE:

SECTION #2:
DIRECTIONS: Write your own person versus person conflict here:

SECTION #3:
DIRECTIONS: Write your own person versus nature conflict here:

SECTION #4:
DIRECTIONS: Write your own person versus self conflict here:

NOW SELECT ONE CONFLICT THAT YOU HAVE WRITTEN (SECTION #2, SECTION #3, OR SECTION #4). FINISH THE STORY BY WRITING A RESOLUTION UNDER THE CONFLICT.

Use a word processing program to create the file above.

WRITING 1

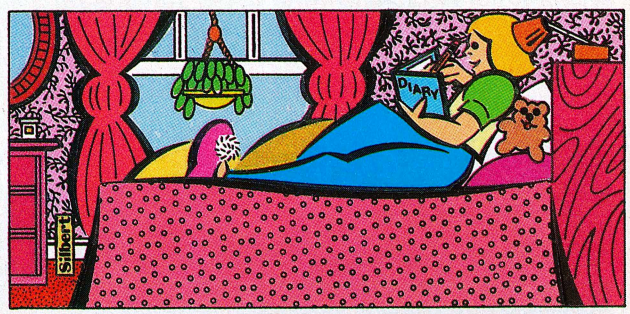
TOPIC: CONFLICT/RESOLUTION

Help Us Out

Everyone has problems, right? You may have problems at school, at home, or at play. Nobody can ever escape having troubles at least once in a while.

How do you find answers to *your* problems? Many people find that reading stories can help. Stories tell you about problems, or *conflicts*, that other people are having. They usually end with a *resolution*, or answer to the problem, in the story. Reading stories can give you ideas about how to solve your own problems. Sometimes writing a story about a problem can also help you feel better about something that's been bothering you.

1. Boot up your word processing program. Load the data disk, and call up the CONFLICT data file.
2. Read Section #1 in the data file. Three story conflicts, or problems, are given.
3. See if you can help out each of the characters in Section #1 of the data file. In the space below each conflict, give a possible resolution. One possible answer is given for the first conflict. See if you can come up with another possibility.
4. Save your work on a blank disk. We will call this disk your personal disk.



WRITING 2

TOPIC: CONFLICT/RESOLUTION

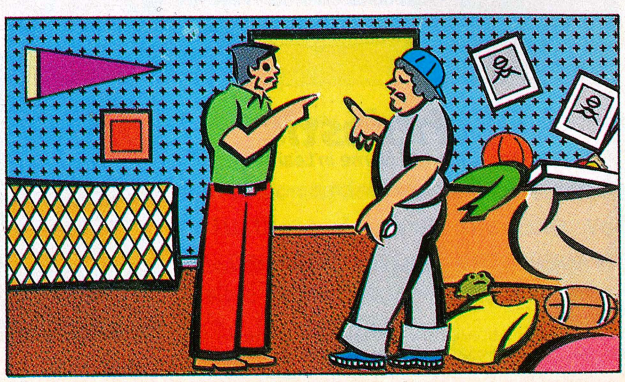
One Against One

Complete Task Card 1 before you try the activity on this card.

Very often when you have a problem, you find that a second person is involved. The conflict may be that someone bullies you in the lunchroom, or that your best friend suddenly won't talk to you.

In fiction, special names are given to different types of conflicts. Conflicts between two people are called *person versus person* conflicts. In Section #1 of your data file, the story about the two brothers who must share a room is an example of a person versus person conflict.

1. Boot up your word processing program. Load the data disk and call up the CONFLICT data file.
2. Reread the conflict given in the data file about the two brothers sharing a room. Think about why this is a person versus person conflict.
3. Now go to Section #2 in the data file. Use this space to write your own person versus person conflict. Do not worry about a resolution for the conflict right now.
4. Save your work on your personal disk.



Bill Silbert

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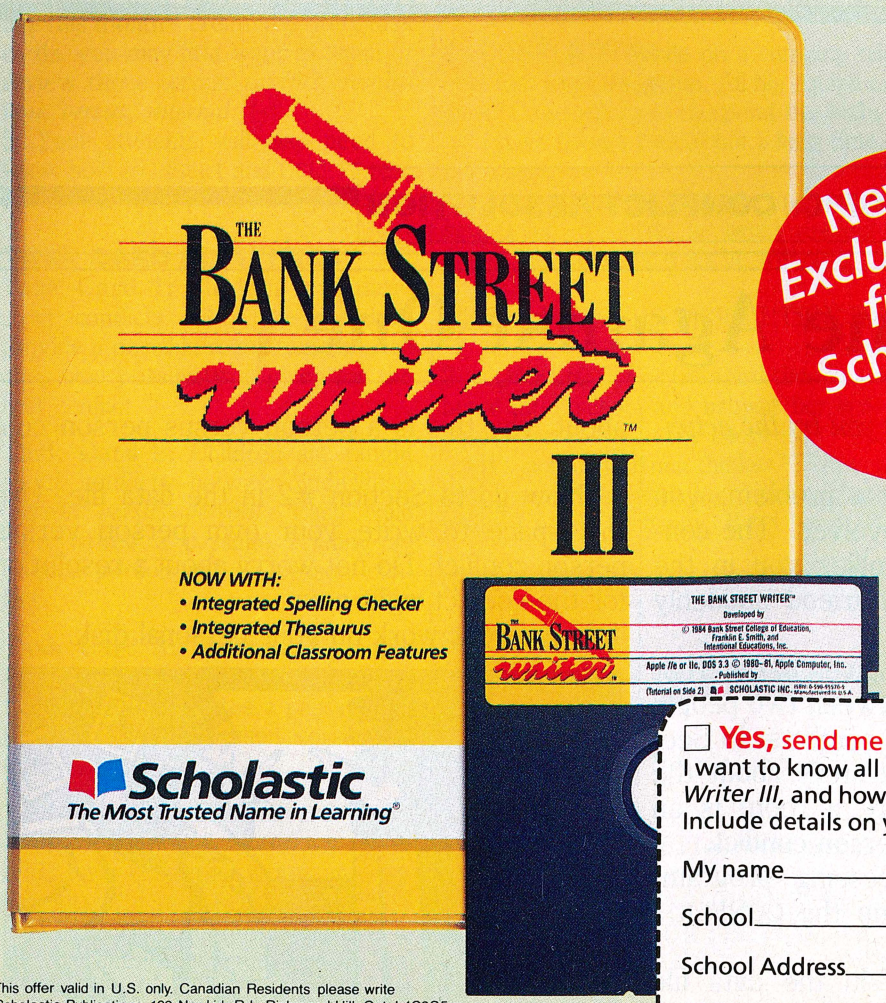

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WRITING 3

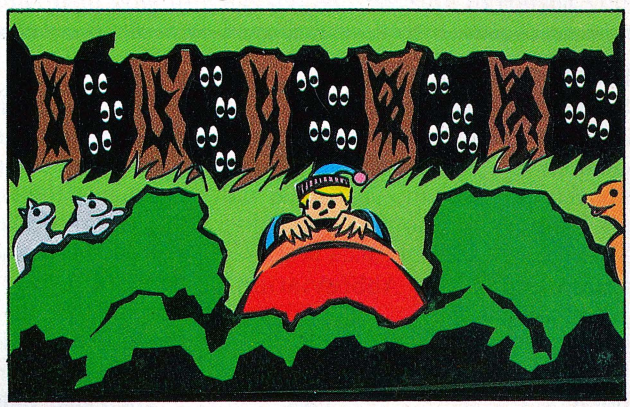
TOPIC: CONFLICT/RESOLUTION

Me? Afraid of Nature?

Complete Task Card 2 before you try the activity on this card.

Aside from conflicts with people, it is also possible to be in conflict with nature. This may sound strange, but it happens all the time. When you read a story about a person catching a huge, powerful fish, or about a person climbing Mount Everest, you are reading a *person versus nature* conflict. In Section #1 of your data file, the story about the boy alone in the woods is an example of a person versus nature conflict.

1. Boot up your word processing program. Load the data disk and call up the CONFLICT data file.
2. Reread the conflict given in the data file about the boy all alone in the woods. Think about why this is a person versus nature conflict.
3. Then go to Section #3 in the data file. Use this space to write your own person versus nature conflict. Do not worry about a resolution for the conflict right now.
4. Save your work on your personal disk.



WRITING 4

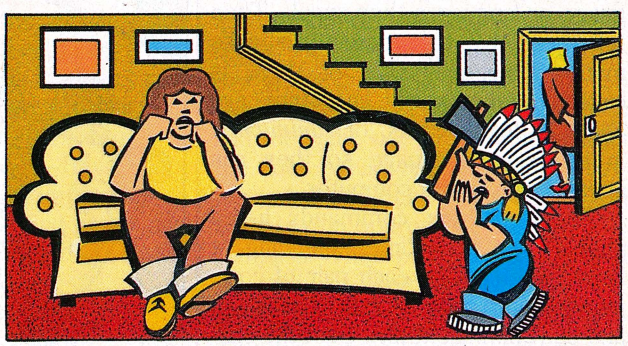
TOPIC: CONFLICT/RESOLUTION

Decisions, Decisions

Complete Task Card 3 before you try the activities on this card.

Learning to make decisions is considered a sign of growing up. Decision-making is also a kind of conflict. It is an *internal* (inside oneself), or *person versus self* conflict. In your data file, the story about Anna, the girl whose mom always asks her to babysit, is a person versus self conflict. Anna is the one who must decide whether to continue helping her mom out or not.

1. Boot up your word processing program. Load the data disk and call up the CONFLICT data file.
2. Reread Anna's conflict. Think about why this is a person versus self conflict.
3. Now go to Section #4 in the data file. Use this space to create your own person versus self conflict. Do not worry about a resolution for the conflict right now.
4. In this set of task cards, you have created three conflict situations. Choose the one you like best. Then use your word processor to complete this story. To do so, you will need to find a resolution to the conflict.
5. Save your work on your personal disk.



Learning to Speak Logo

Computer programming may seem far beyond the grasp of preschool and primary students, yet children as young as three to five have demonstrated that they *can* learn to program by using the popular computer language, Logo — especially if the task is approached in fun, progressive steps.

Through the following activities, children learn the primary "vocabulary" of the Logo language: basic directional concepts such as *forward* and *back* (measured in steps) and *left* and *right* (measured in degrees). From these basics kids move on to writing and running Logo programs on the computer.

PART ONE: LEARNING SIMPLE COMMANDS

The activities in this section show children how basic concepts in directionality are used in conjunction with six important Logo commands. These six Logo commands are:

Command	Abbreviation
SHOW TURTLE	ST
CLEAR SCREEN	CS
FORWARD	FD
BACK	BK
RIGHT	RT
LEFT	LT

(Note: In all of the activities in this column, we will be using the abbreviated versions of command names.)

Introducing Commands

Preparation: Make a flashcard for each one of these commands: ST, CS, FD, BK, RT, and LT. (You might decorate each of these with a bit of "turtle action," as in the flashcard illustration on this page.)

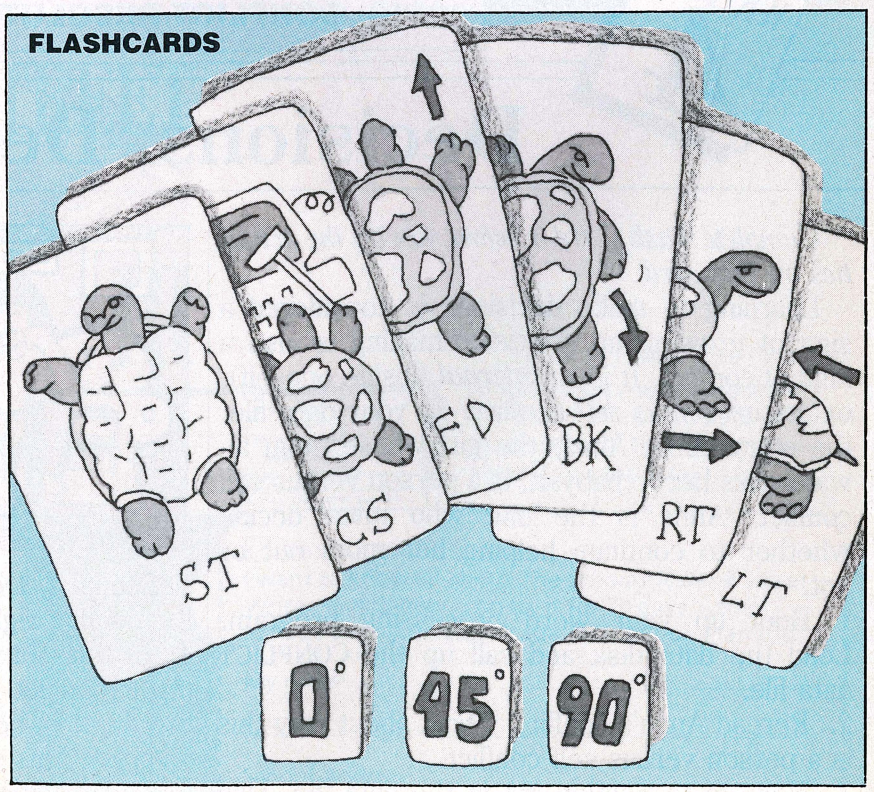
Activity: Ask the children what language or languages they speak. Then tell them that the computer speaks many languages. One of them is called Logo. Explain that they are about to learn words, or *commands*, in the Logo language so they can speak Logo to the computer.

Teach the six commands listed above, two at a time, spending at least two days on each pair of commands. Start with ST (SHOW TURTLE) and CS (CLEAR SCREEN). Seat the children in a circle. Display the ST flashcard and tell the children that S stands for "show" and that T stands for "turtle." Remind them that the *s* sound is at the beginning of the word "show" and the *t* sound is at the beginning of the word "turtle." When you hold up the ST flashcard, the children are to stand and extend their arms so that they "show." Practice this several times.

Once the children understand this, hold up the CS flashcard. Explain what it stands for and show the sound relationship to the words as you did with ST. Tell the children that when they see the CS (CLEAR SCREEN) flashcard, they are to hide their heads in their laps so that no one can see them. Practice this until the children know the difference between ST and CS.

Then load your Logo software into your classroom computer and show the children what happens when you push the ST keys. The triangle that "shows" on the monitor screen is the Logo "turtle" — a most important character, you might note. Push CS and watch the turtle disappear for a second and reappear. Explain that any programming that has been done will also disappear when you push CS.

Next, teach the children FD (FORWARD) and BK (BACK). Hold up the flashcards and relate the beginning and ending sounds with the words that they stand for. Ask the children to stand. When you hold up FD, show them how to lean forward. (Note: At this point they only lean because you have not yet introduced Logo *steps*.) Hold up BK and show them how to lean back. When the children understand the difference between FD and BK, introduce "steps." Write FD 5 on a card or chalkboard, and tell children that the space and the number 5 after FD means that they can do more than



"Turtle action" flashcards (top) teach basic Logo commands, while degree flashcards (bottom) help children practice their compass turns.

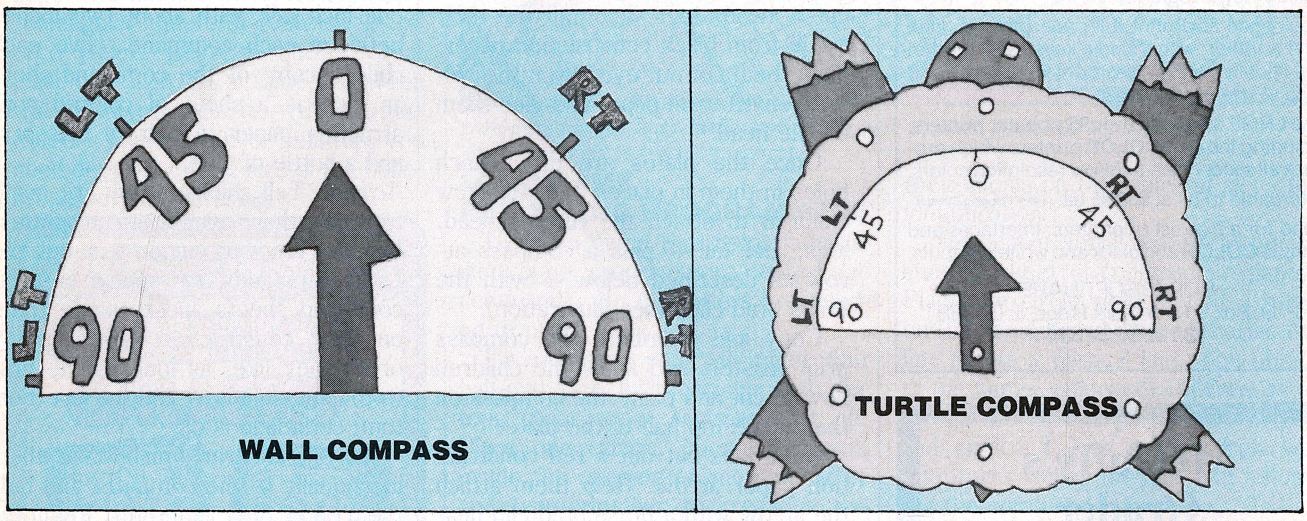
Michael Donato

lean forward — they can take five steps forward. Explain that the space between FD and 5 is very important, like a pause to look both ways before crossing the street. Do similar exercises with BK and a number. When the children understand the meaning of the space and the number accompanying FD and BK, load the Logo software into the computer and type FD (space) with any number. Direct the children's attention to the movement of the turtle on the screen.

Finally, teach the children RT (right) and LT (left). With an erasable, nontoxic pen or marker, write RT on their right hand and LT on their left hand. Ask them to stand in straight lines facing you. Tell them that this is their 0° position. When you hold up the RT flashcard, show them how to do a 90° right turn and then return to the 0° position facing the teacher. Repeat this sequence with LT.

Drawing on the Computer

Preparation: Load your Logo software into the computer and have the children sit in a semicircle so that they can see the computer monitor.
Activity: Ask kids to give you Logo commands. Enter the commands and let them see what the turtle does on the screen. (Be sure to consult your Logo software manual to ensure that you're in the PEN DOWN or drawing mode throughout this activity.)



Children learn about Logo's left and right turns by practicing with large compass shapes on the wall or floor. Children are then ready to make their own turtle compasses from paper plates and construction paper.

PART TWO: LEARNING ABOUT DEGREES

The following four activities help children become thoroughly familiar with the Logo concepts of 0°, 45°, and 90° that accompany the LT and RT commands. The first two activities use large motor activity to teach these concepts. The third uses a smaller motor activity. The final activity has children put these concepts to work on the computer, using Logo software.

Compass on the Wall

Preparation: On a fairly blank wall in your classroom, display large, dark, easy-to-see cutout numbers and degree signs in an arrangement that simulates the top half of a compass (see illustration). In the center of the wall at the top, place 0° (zero). In the lower right and left corners, place RT 90° and LT 90°, respectively. In between the 0° and the 90° on each side, place RT 45° and LT 45° in their places.
Activity: Have children stand in a line in the center of the room, facing the wall compass. Tell the children that they are looking at the top part of a *compass*. A compass is an object that shows us which way to go. Tell children to pretend that their arm is a needle on the compass. Have them raise their arm straight up to point to 0°. Then ask them to find RT 90° and point to it. Repeat this activity for all compass directions.

Compass on the Floor

Preparation: For this activity you will need: masking tape; two sets of LT and RT flashcards; two sets of plain flashcards for 0°, 45°, and 90° (see flashcard illustration); and a posterboard arrow 40 inches long. Use the masking tape to create the top half of a compass (just like the wall compass) on your classroom floor.
Activity: Have the children sit on the floor around the compass. Review degree concepts by flashing the 0°, 45°, and 90° cards and asking the children to identify the degrees on each card. Place the large posterboard arrow on the compass on the floor. Ask the children to identify the left side and the right side of the compass on the floor, while you move the arrow to the left and right. Place the LT and RT cards on appropriate sides of the compass. Then place the 0°, 45°, and 90° cards in their proper positions. Hold the second set of flashcards with the numbers and degrees; as you flash each card, ask the children to read it together while one person moves the arrow to the correct position on the compass.

My Own Turtle Compass

Preparation: For this activity you will need a paper plate for each child; green finger paint; black, yellow, and red construction paper; a compass

(continued)

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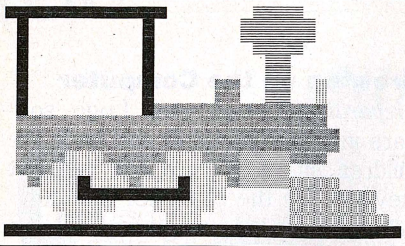

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(continued from page 39)

print master with 0°, 45°, and 90° markings to fit the top half of the paper plate; a hole punch; brass brad clips (seven for each child); scissors; glue; and an apron or other clothing protector for each child.

Activity: The children should sit at their tables and wear their aprons. Tell them they are going to make their own turtle compasses. Distribute the green finger paint and the paper plates, and demonstrate to the children how to paint their plates green. While the plates dry, help kids cut a head, legs, and tail for their turtle from black construction paper; have them cut out eyes from the yellow construction paper and glue them on the head.

Once the plates are dry, punch holes in them in places that will allow children to attach the turtle's head, legs, and tail — plus a compass arrow as described below — with the brass brad clips (see illustration).

Copy and distribute the compass print master, and show the children how to cut and paste the compass on the middle top half of the plate.

Have kids cut out a red construction paper arrow. Help them attach the arrow with a brass brad clip near the middle of the plate, just below the pasted compass.

Once all the turtles are completed, review the Logo commands and let the children act out the commands with their movable turtles. After each action, always instruct the children to go back to 0°.

Computer Dictation Activity

Preparation: Seat the class in a semicircle on the floor so that everyone can see your computer monitor. Boot up your Logo software.

Activity: Tell the children that now they are going to see how Logo's degrees work on the computer. Ask for the proper command to start. Kids should say ST. Let one child type in the ST command. (Remind the typist to press RETURN and use the space bar properly while typing.) Then ask the children to call out random LT 45°, LT 90°, RT 45°, and RT 90° commands for you to type in. Have them watch the monitor closely to see how the turtle moves.

PART THREE: WRITING A PROGRAM

Children are now ready to use their knowledge of Logo commands to write their own programs. The following activity provides a good way to introduce Logo programming.

Logo Programming

Preparation: Prepare a print master of all the Logo commands explored in this unit. These are: ST, CS, FD 5, BK 5, RT 45°, LT 45°, RT 90°, and LT 90°. The letters and numbers should be about one inch tall, with about two inches between each command. Give each child a copy of the command sheet as well as a sheet of colored construction paper, a pair of scissors, and a bottle of glue.

Activity: Tell children they are going to write their own Logo programs. Instruct them to cut or tear out the Logo commands that appear on their command sheets and to paste them on their construction paper in any order they like, as long as the first (top) command is ST and the last (bottom) command is CS.

As the children finish, take them individually to the computer and help them enter their programs. Reinforce proper keyboarding.

While at the computer, you might also want to introduce problem solving activities. As a teacher-directed activity, help individual children:

1. Make the turtle touch the top of the monitor screen.

2. Make it go back to the bottom of the screen.

3. Make it go all the way to the right of the screen.

4. Make it go all the way to the left of the screen.

Or, for a real challenge, have your students try to program a house, a star, or another simple picture. ■

Trisha Ainsa is director of the "Computer Literacy in Children" Title VII project at the University of Texas at El Paso.

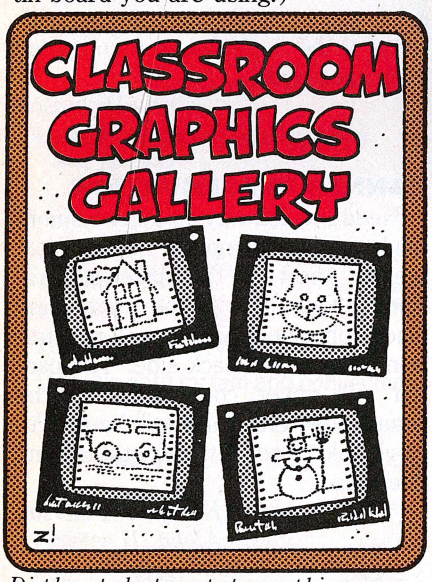
MICRO IDEAS

QUICK COMPUTER TIPS AND ACTIVITIES

CREATE A GRAPHICS GALLERY

A way to challenge your students to create imaginative computer graphics is to display their works on a bulletin board that you call a "graphics gallery."

To make the gallery, cover an entire bulletin board surface with a light colored construction paper. Then, make paper computer monitors by rounding the corners of 9 ½" x 12" sheets of darker colored construction paper. Mount the monitors on larger rectangular sheets of contrasting colored paper. Leave a border of at least one inch on all sides between the monitor and its rectangular frame. (The number of monitors you need depends on the size of the bulletin board you are using.)



Display student computer graphics.

Attach the monitors to the bulletin board below the words "Classroom Graphics Gallery," which should also be cut out of construction paper letters.

When a student creates an attractive computer graphic, print out the design and staple it onto one of the monitors. On the "frame" of the monitor, write the title of the work (if it has one), and the name of the artist. Change the gallery display frequently.

Joanne Davis
Kew Gardens, NY
Miryam Alter
New York, NY

Introduce kids to Logo turtle movements with a board game you make yourself.

LOGO GAME FOR YOUNG PROGRAMMERS

Here's a game that helps familiarize young programmers with Logo commands. No computers are needed to play.

To prepare, you will need four half-pint size milk cartons with the tops (pour spout sections) cut off. Place one carton, open-side down, inside the opening of another carton and tape together to create a six-sided square. Now do the same with the other two cartons. Paint the cartons (which will be used as dice) white, or cover them with white construction paper. On one die, mark each side with a different Logo command: FD and BK in red, ST and CS in black, RT 90 and LT 90 in blue. On the other die, mark each side with a different number from one through six.

On a 9 ½" x 11" sheet of white construction paper, measure and draw half-inch squares across and down the page. In the center of the paper draw a heavy black horizontal and vertical axis (see illustration). Then draw a black triangle on the horizontal axis, just where it bisects the vertical axis. This is your game board, and is meant to represent the Logo screen grid with the turtle in the HOME position.

From colored construction paper, cut out small turtle triangles for your students. Each child playing should have a different colored turtle to use, if possible. If not, have children write their initials on their playing piece for identification.

Now cut a small red circle out of another sheet of construction paper. Place the circle randomly at a point on the game board where a horizontal line meets a vertical line. The object of the game, explain to children, is to be the first one to get a turtle to this red circle. To do so, children will take turns rolling the dice and following the commands that they roll.

When playing the game, the multicolored die is always rolled first. To get on the board, tell students, they must first roll the ST (show turtle) command on their turn. Once a child rolls ST, he or she should place his or her turtle on top of the game board's turtle.

Demonstrate to children how the Logo turtle moves, depending on what command is rolled. Have children try to figure out in advance what commands they need to roll in order to get to the circle. If the multicolored die lands on one of the "red" commands (FD or BK), the child should roll the second die to find out how many squares to move forward or back. If a child rolls CS (clear screen) at any point in the game, he or she must remove his or her piece from the board and start over. If a child rolls a command that will move a playing piece off the game board, the child loses the turn.

Trisha Ainsa
El Paso, TX

(continued)

Ron Zalme

The Chinese zodiac signs are represented by these 12 animals!

WHAT'S YOUR CHINESE ZODIAC SIGN?

Friday, January 30 is Chinese New Year this year. If there's no room in your classroom for a dragon parade, a lantern procession, or fireworks, encourage students to celebrate by running this BASIC computer program instead. The program can tell your students which zodiac sign and accompanying personality traits the Chinese attribute to persons born in any given year. The program can be used to figure out *anyone's* Chinese zodiac sign. For example, what sign and traits are ascribed to George Washington, the first President of the United States, born in 1732? (Just type 1732.) How about for Confucius, the Chinese philosopher, born in 551 B.C.? (Type -551.)

This program was designed for use with Apple computers. It can, however, be easily adapted for use with other computer brands.

```
10 REM CHINESE NEW YEAR PROGRAM
20 HOME
30 PRINT "HAPPY CHINESE NEW YEAR!"
40 PRINT
50 INPUT "WHAT YEAR WERE YOU
   BORN? ";A
60 B=INT (A/12)*12
70 C=A-B+1
80 DATA MONKEY,COCK,DOG,BOAR,
   RAT,OX,TIGER,RABBIT,DRAGON,
   SNAKE,HORSE,SHEEP
90 FOR I=1 TO C
100 READ A$
110 NEXT I
120 PRINT
130 PRINT
140 PRINT
150 PRINT "YOUR CHINESE ANIMAL
   SIGN IS THE ";A$; "."
160 ON C GOSUB 200,300,400,500,600,
   700,800,900,1000,1100,1200,1300
170 END
200 PRINT "YOU ARE A SMART,
   ENTHUSIASTIC PERSON.":RETURN
300 PRINT "YOU ARE DEVOTED TO
   LEARNING.":RETURN
400 PRINT "YOU ARE LOYAL, HONEST,
   AND WORK WELL WITH
   OTHERS.":RETURN
500 PRINT "YOU ARE NOBLE, AND WILL
   ALWAYS HAVE CLOSE
   FRIENDS.":RETURN
600 PRINT "YOU ARE AMBITIOUS, YET
   HONEST. YOU LIKE SPENDING
   MONEY.": RETURN
700 PRINT "YOU ARE PATIENT AND GET
   ALONG WELL ON YOUR
   OWN.":RETURN
800 PRINT "YOU ARE BRAVE, HONEST,
   AND SENSITIVE.":RETURN
900 PRINT "1987 IS YOUR YEAR! NOT
   ONLY THAT, BUT ";
901 PRINT "YOURS IS THE LUCKIEST OF
   ALL SIGNS.":RETURN
1000 PRINT "YOU ARE A VERY HEALTHY
   PERSON. SOME FIND IT HARD TO";
1001 PRINT " UNDERSTAND YOUR
   WAYS": RETURN
1100 PRINT "PHYSICAL BEAUTY IS VERY
   IMPORTANT TO YOU. YOU ALSO
   HAVE A BAD ";
1101 PRINT "TEMPER WHEN YOU ARE
   ANGRY.":RETURN
1200 PRINT "YOU ARE POPULAR AMONG
   YOUR FRIENDS. YOU ENJOY
   SHOWING OFF.":RETURN
1300 PRINT "YOU ARE CREATIVE, BUT
   ALSO SHY.":RETURN
```

Louis Glasthal
Cambridge, MA

TEACH COMPUTER ERROR MESSAGES WITH THIS GAME

A grammatical slip in front of my class one day prompted one student to ask if I were aware of my SYNTAX ERROR. The class was amused, but I was to have the last laugh. I challenged my programmers to come up with a more complete list of "classroom errors."

Now if a student of mine forgets a notebook, pencil, or other supply, he or she is accused of being OUT OF MEMORY. Why? Because of a MISSING OPERAND. A spelling mistake is a TYPE MISMATCH; a messy desk becomes OVERFLOW. Kids in my class no longer say, "I don't know the answer, Mr. Dickinson." Instead they apologize for being OUT OF DATA.

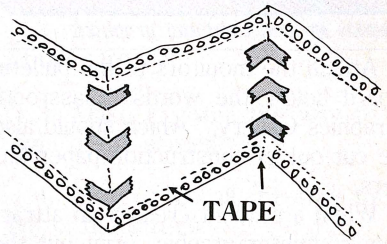
Our little game has turned into a great way to familiarize students with some of the more common computer error messages.

Craig Dickinson
Orono, ME

BANNER PRESERVATION

Need a quick way to keep banners made out of computer paper from tearing apart at the page perforations? Turn the banner over and place adhesive tape along all perforation lines on the back side. The banner will never come apart at the seams now, and you'll still be able to easily fold or roll it up for storage and later use.

Kathy M. Peterson
Alpha, IL



SEND US YOUR MICRO IDEAS

Do you have computer activities, bulletin boards, or management tips you'd like to share? Send them to "Micro Ideas," *Teaching and Computers*, 730 Broadway, New York, NY 10003. We'll pay $15 to $30 for each idea we publish and $5 for each one-line tip we use.

(continued)

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a. ☐ Recommend type/brand
b. ☐ Approve purchase
c. ☐ Both of the above

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c. ☐ Approve purchase
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b. ☐ Educational Dealer
c. ☐ Catalog
d. ☐ Mass merchandiser

4. Do you recommend to students and parents?
Yes ☐ No ☐

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
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97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150

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Please check an entry for each category.

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Yes ☐ No ☐

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P.O. Box 2040
Mahopac, NY 10541-9963

SET UP A SOFTWARE LIBRARY DATA FILE

Managing a software library is no easy task! The job can be made a lot easier, however, if you catalog all computer software into one data file. Setting up the file may take a little bit of time (depending on the size of your software collection), but if you are careful to keep the file up-to-date as new programs are purchased, you'll be saving yourself hours of aggravation later on.

First, assign all software in your collection a code number consisting of one or two letters and two numbers. The letter or letters in the code should indicate what subject area the software is used in. *M* stands for math, *R* for reading, and so on. Use the letter *U* to indicate a utility program.

The first number following the letter should indicate what grade level the software is used in most frequently. If it is a program that can be used at any grade level, use a zero in the space for grade level.

Finally, assign a number to all software distinguishing one program from all others. For example, assign the first fifth grade reading program that you come to the code number *R-5-1*. Assign the next one the code number *R-5-2*.

Place a sticker with its code number on it on each piece of software in your collection. Then set up the following fields, using any data base program:

CODE NUMBER:
NAME OF PROGRAM:
PUBLISHER:
CURRICULUM AREA:
GRADE LEVEL:
LAST TEACHER TO USE THE PROGRAM:
TYPE OF PROGRAM: *(drill and practice, simulation, CAI, or tool)*
DESCRIPTION OF PROGRAM:

Fill out one record for each piece of software your school owns. Then shelve all software for each subject area together, arranging the programs in numerical order by the last number in the code. You'll be amazed at how much easier it becomes to find just the right program you need — when you need it.

Terry Rosengart
Nanuet, NY

LOGO GRAPHIC FLAGS

While using the software program *Where in the World is Carmen Sandiego?* (published by Broderbund), I hit upon the idea of having students use Logo graphics to create flags of the various countries they were learning about while using *Carmen*.

At the bottom of each flag graphic they created, I had students write three PRINT statements telling about their flag, or the country the flag represents. The procedure below, for example (created with Apple Logo), shows the flag of Honduras — five blue stars on a thick, white stripe, bordered on top and on bottom with solid blue stripes.

After your students have all had a chance to create a flag, challenge them to create a superprocedure that would show a series of the flags in sequence.

```
TO STAR :S
  HT PD
  REPEAT 5 [FD :S RT 144]
  PU
END

TO HONDURAS
  CS HT PU
  SETBG 5
  SETPOS [-140 50]
  SETPC 1
  PD RT 90
  REPEAT 60 [FD 280 RT 90 FD 1 LT 90]
  SETPC 5 PU
  SETPOS [-45 40] STAR 10
  SETPOS [-45 0] STAR 10
  SETPOS [35 40] STAR 10
  SETPOS [35 0] STAR 0
  SETPOS [-5 20] STAR 10
  PR [THIS IS THE HONDURAN FLAG.
ITS STARS]
  PR [REPRESENT 5 COUNTRIES THAT
BROKE FROM]
  PR [SPAIN AND FORMED A UNION IN
1823.]
END
```

Dr. Carole Kidder
Lock Haven, PA ■

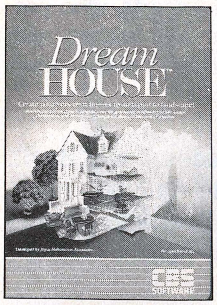
Meet the Teacher Advisory Board

The following computer-using teachers are very important to *Teaching and Computers*. They are the classroom experts who provide *T&C* editors and artists with feedback and article ideas each month.

Tom Berry, grades 7 and 8, St. Leo's School, San Antonio, TX.
Laura Chase Bullock, grades 4–8, Dunlap Unit School District, Dunlap, IL.
Beth Deardorff Smith, grade 6, Asa Adams School, Orono, ME.
Norman Holcomb, grades 7 and 8, Marion Local Schools, Maria Stein, OH.
Donna Keller, grades K–6, Stottlemyer School, Westland, MI.
Nancy Kiernan, grades 1 and 2, Stottlemyer School, Westland, MI.
Russ Lofthouse, grades K–6, Meadow Point Elementary School, Aurora, CO.
Carol H. Maehara, grades 1–6, Kahala Elementary School, Honolulu, HI.
Martha Main, grades 1–6, Grassy Creek Elementary School, Indianapolis, IN.
Dee Miller, grades 1–6, St. James Day School, Texarkana, TX.
Frances K. Morse, grades 4–8, Edward Devotion School, Brookline, MA.
Max Mulliner, grades K–8, West Jordan School, Sandy, UT.
Jacqueline Osborne, Nursery School, Kilby Laboratory School, Florence, AL.
Thelma F. Scott, grade 5, Lester Demonstration School, Memphis, TN.
Martha J. Tompkins, grades K–4, Old Donation Center for the Talented and Gifted, Virginia Beach, VA.

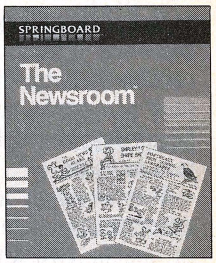
NOTE TO PARENTS

SOFTWARE SHOPPING LIST



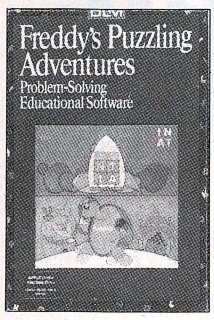
Dear Parent:

Many parents who own home computers have asked me to recommend software suitable for children to use at home. Here is a list of programs that teachers across the country recommend for such use. I hope you find the list helpful.

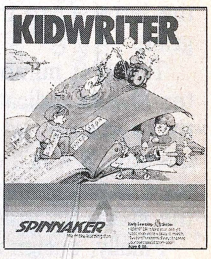


There are many excellent software programs that are not mentioned on this list. Many are game programs. When considering game programs, look for ones that require thinking and creativity rather than just good eye-hand coordination. When higher-level thinking skills are involved in a game, kids are more likely to play it again and again.

While games are always popular with children, there are also many enjoyable programs that develop artistic, musical, and thinking skills. Teachers seldom have time to cover all of these areas in class, but exposure to each is essential for developing a well-rounded, motivated child.

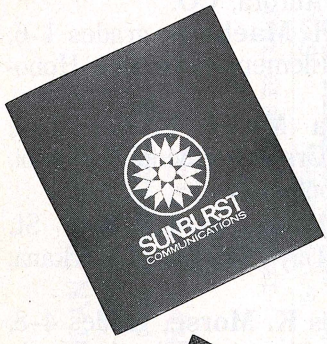


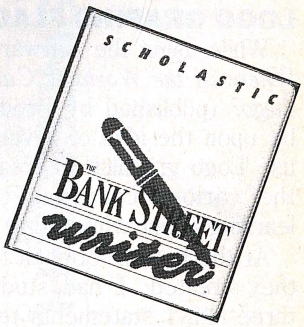
Before you buy any piece of software, check its label to be sure you have all the computer equipment necessary to run it. In some cases *peripherals* (additional computer equipment such as a joystick or mouse) are needed to run the program.

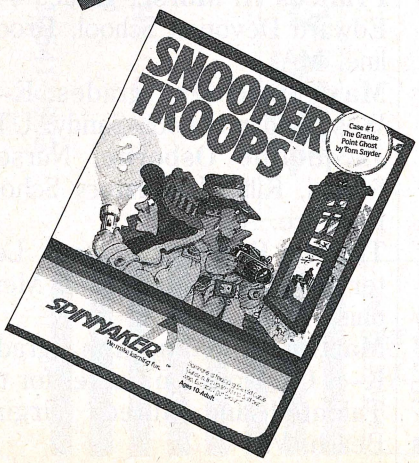


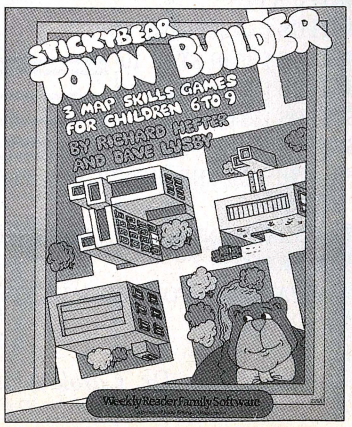
One last reminder: The computer is a useful and enjoyable tool, but it should not replace reading books, playing learning games with family members, and making trips to museums and zoos. All of these activities are important in the education of your child.

Sincerely,









SOFTWARE SHOPPING LIST FOR PARENTS

Adventure Master. Children create their own adventure games in which they describe places, plan events, and construct a mystery for friends to solve. *Apple II series, IBM PC/PCjr, Commodore 64/128, Atari 400/800/1200XL. Ages 9 and up. $62.95. CBS Software.*

Bank Street Filer. A data base program that includes sample files and lessons on how to use data files. *Apple II series, Commodore 64. Ages 10 and up. $69.95. Broderbund Software.*

Bank Street MusicWriter. Kids can compose and play music with the help of this program. *Apple II series, Commodore 64, Atari 400/800/600XL-1200XL. Ages 10 and up. $49.95. Mindscape.*

Bank Street Writer II. A word processing program that simplifies editing and redrafting for children. *Apple II series, Atari 400/800, Commodore 64/128, IBM PC/PCjr. Ages 9 and up. $69.95. Broderbund Software.*

Below the Root. Players become any one of five characters in this adventure game. The adventure takes place above and below the "Tree World." *Apple II series, Commodore 64, IBM PC. Ages 9 and up. $39.95. Windham Classics.*

Blazing Paddles. Children create computer art using more than 200 color mixes and different kinds of brush strokes. *Apple II series. Ages 9 and up. $49.95. Baudville.*

Cave Girl Clair. In this adventure game, children help Clair fend for herself in the wilderness. She must tend the fire, gather food, and evade wild animals. *Apple II series, Commmodore 64/128, Atari 800/800XL, IBM PC. Ages 7-14. $39.95. Addison-Wesley Publishing.*

CrossCountry USA. Kids become truck drivers and in the process, learn about map reading, strategy and decision making skills, U.S. commodities, and political geography. *Apple II series. Ages 10 and up. $39.95. Didatech Software.*

Crossword Magic. Children create their own crossword puzzles. *Apple II series, Atari 400/800/1200 (40K), Commodore 64/128, IBM PC/PCjr. Ages 9 and up. $49.95. Mindscape.*

Delta Drawing. Children learn programming concepts as they use this software to make geometric drawings. *Apple II series; Atari 400/800/1200, IBM PC, Commodore 64/128. Ages 4 and up. $39.95. Spinnaker Software.*

Dream House. Kids design and decorate a home using several different floor plans and architectural styles. *Apple II series, Commodore 64/128. Ages 8 and up. $39.95. CBS Software.*

EduCalc. A spreadsheet program that includes lessons on how to use a spreadsheet for budgeting, scheduling, and more. *Apple II series, Commodore 64/128, IBM PC/PCjr. Ages 12 and up. $59.95. Grolier Electronic Publishing.*

European Nations and Locations. Two social studies games: One uses a map to teach the locations of European nations; the other teaches about European resources, cities, languages, more. *Apple II series, Commodore 64/128, IBM PC/PCjr. $49.95. DesignWare.*

Freddy's Puzzling Adventures. Players develop problem solving skills through number and word puzzles. They also can create their own puzzles. *Apple II series, Commodore 64/128, IBM PC/PCjr. Ages 6 and up. $29.95. Developmental Learning Materials.*

Friendly Filer. Data base software that includes a built-in practice data file. The program makes it easy for kids to create, sort, save, and print data files. *Apple II series, Commodore 64/128, IBM PC/PCjr. Ages 7–14. $49.95. Grolier Electronic Publishing.*

Kermit's Electronic Storymaker. Youngsters learn the relationship between words and their meanings through animated graphics. Words can be combined to write stories. *Apple II series, Commodore 64. Ages 4–7. $34.95. Simon & Schuster.*

Kids at Work. Kids build city and country scenes using shapes. *Apple II series, Commodore 64. Ages 5–10. $29.95. Scholastic Inc.*

KidWriter. Combines word processing and graphics to help kids write illustrated stories. *Apple II series, Commodore 64/128, Atari 400/800/1200, IBM PC/PCjr, Tandy 1000. Ages 6–10. $39.95. Spinnaker Software.*

Magic Slate. Simple word processing program that can be used to sharpen proofreading and editing skills. *Apple II series. Ages 6 and up. $89.95. Sunburst Communications.*

Monty Plays Scrabble. Up to three players compete against a computerized Scrabble® opponent. *Apple II series, TRS-80 Model III, IBM PC/PCjr. Ages 8 and up. $39.95. Ritam Corporation.*

Music Maestro. Children can use this program to play, record, and save songs on disk. One part of the program teaches notes, and another allows color graphics to be combined with the music. *Apple II series, Commodore 64/128, IBM PC. Ages 4–10. $34.95. Springboard Software.*

The Newsroom. This program helps children design and print out their own newspapers. *Apple II series, Commodore 64, IBM PC. Ages 8 and up. $49 95. Springboard Software.*

Operation: Frog. Children dissect a frog in this science simulation. *Apple II series, Commodore 64/128. Ages 10 and up. $59.95. Scholastic Inc.*

The Other Side. This game simulates diplomatic interaction between two nations. *Apple II series, Commodore 64, IBM PC. Ages 14 and up. $89.95. Tom Snyder Productions.*

Patchworks. Kids use geometric shapes to design quilts. *Apple II series. Ages 10 and up. $59.95. Random House.*

Pan. Children use this program to compose and play music on the computer. *TRS Color Computer. Ages 10 and up. $29.95. Tandy/Radio Shack.*

Peanut's Picture Puzzles. Children solve picture puzzles about 13 Peanuts characters. *Apple II series, Commodore 64/128. Ages 4–7.$39.95.Random House.*

The Print Shop. Kids create signs, posters, and stationery that have graphic images and fancy type styles. *Apple II series, Atari 400/800/600-1200 XL (48K), Commodore 64/128. Ages 7–adult. $44.95. Broderbund Software.*

Puzzle Master. Kids solve forty picture puzzles; also allows children to create an infinite number of their own puzzles. *Apple II series, IBM PC/PCjr. Ages 4 and up. $34.95. Springboard Software.*

Seven Cities of Gold. Kids explore North and South America by role playing sixteenth century Spanish conquistadors.

Apple II series, Commodore 64/128, Atari 400/800/600XL-1200XL, IBM PC/PCjr, Tandy 1000. Ages 9 and up. $40. Electronic Arts.

Smart Eyes. A program that helps children increase reading speed. *Apple II series, IBM PC. Ages 12 and up. $59.95. Addison-Wesley Publishing.*

Snooper Troops I or II. Children play private investigator and use clues to solve mysteries. *Apple II series, Atari 400/800/1200, IBM PC, Commodore 64. Ages 8 and up. $32.95. Spinnaker Software.*

Snoopy Writer. Children create their own Snoopy scenes and stories starting with sentences provided by the program. *Apple II series, Commodore 64. Ages 5–10. $39.95. Random House.*

Snoopy's Skywriter Scrambler. Snoopy gives a challenge word, then players make smaller words using those letters. *Apple II series, Commodore 64/128, PET. Ages 7–12. $39.95. Random House.*

Stickybear ABC. Children learn to recognize letters by watching animated pictures. *Apple II series, Atari 400/800/600XL-1200XL, Commodore 64/128. Ages 3–5. $39.95. Weekly Reader Software.*

Stickybear Numbers. Kids learn about numbers and counting with the help of animated pictures. *Apple II series, Atari 400/800/600XL-1200XL, Commodore 64/128. Ages 3–6. $39.95. Weekly Reader Software.*

Stickybear Printer. Children design and print cards, stationery, and signs; illustrate stories; and more. *Apple II series. Ages 5 and up. $39.95. Weekly Reader Software.*

Stickybear Town Builder. Kids learn map-reading skills as they design their own town. *Apple II series. Ages 6–9. $39.95. Weekly Reader Software.*

Story Tree. Children follow instructions for writing specific stories, then change or extend the stories. *Apple II series, Commodore 64/128, IBM PC. Ages 9 and up. $59.95. Scholastic Inc.*

Trains. Children run their own railroad and service industries located along the rail line. *Apple II series, Commodore 64/128, Atari 400/800/600XL-1200XL, IBM PC, Tandy 1000. Ages 8 and up. $29.95. Spinnaker Software.*

Where in the World is Carmen San Diego? Children travel the world chasing a crime suspect; the computer gives clues based on geography. *Apple II series. Ages 9 and up. $39.95. Broderbund Software.*

Word Detective. Kids make smaller words using the letters of a given larger word. *Apple II series, Commodore 64, IBM PC, Tandy 1000. Ages 8 and up. $59. Sunburst Communications.*

PUBLISHERS' ADDRESSES

Addison-Wesley Publishing
2725 Sand Hill Road
Menlo Park, CA
617/944-6793

Baudville
1001 Medical Park Drive S.E.
Grand Rapids, MI 49506
800/824-8873; 616/957-3036

Broderbund Software
17 Paul Drive
San Rafael, CA 94903
415/479-1170

CBS Software
One Fawcett Place
Greenwich, CT 06836
800/ASK-CBS4; 203/622-2673

DesignWare, Inc.
185 Berry St.
San Francisco, CA 94107
800/572-7767; 415/546-1866

Didatech Software
810 Broadway, Suite 549
Vancouver, BC Canada V5Z 4C9
604/687-3468

Developmental Learning Materials
One DLM Park
Allen,TX 75002
800/527-4747

Electronic Arts
2755 Campus Drive
San Mateo, CA 94403
415/572-2787

Grolier Electronic Publishing
Sherman Turnpike
Danbury, CT 06816
800/858-8858

Milliken Publishing
P.O. Box 21579
St. Louis, MO 63132
314/991-4220

Mindscape
3444 Dundee Road
Northbrook, IL 60062
800/221-9884; 312/480-7667

Random House
201 E. 50th St.
New York, NY 10022
800/638-6460; 212/572-2616

Ritam Corp.
3011 W. Grimes, P.O. Box 921
Fairfield, IA 52556
515/472-8262

Scholastic Inc.
730 Broadway
New York, NY 10003
800/325-6149

Simon & Schuster
1230 Avenue of the Americas
New York, NY 10020
800/223-2336; 800/442-7070 (NY)

Tom Snyder Productions
123 Mt. Auburn St.
Cambridge, MA 02138
617/876-4433

Spinnaker Software
215 First St.
Cambridge, MA 02142
617/494-1225

Springboard Software
7808 Creekridge Circle
Minneapolis, MN 55435
800/328-1223; 612/944-3915

Sunburst Communications
39 Washington Ave., Room EA
Pleasantville, NY 10570
800/431-1934; 914/769-5030

Tandy/Radio Shack
1800 One Tandy Center
Ft. Worth, TX 76102
800/433-5682; 800/722-8538 (TX)

Weekly Reader Software
245 Long Hill
Middletown, CT 06457
800/852-5000; 203/638-2400

Windham Classics
Div. of Spinnaker Software
215 First St.
Cambridge, MA 02142 617/494-1225

SOFTWARE SHOWCASE

SOFTWARE RECOMMENDED FOR TEACHERS, BY TEACHERS

MUPPET WORD BOOK

Computer: Apple II series
Topic: Prereading and reading
Grade Level: Preschool–1

Muppet Word Book is made up of six programs that use Muppet characters to teach young children about letters, words, and writing. It can be used with any one of the following input devices: the Muppet Learning Keys, Touch Window, the Apple mouse, or a regular Apple keyboard.

The first two programs on the menu, *Parking Lot* and *Elevator*, help children learn to distinguish letters from nonletters and numbers, as well as to distinguish upper case letters from lower case letters.

The next program, *Pigs in Space*, explores initial consonant and vowel sounds.

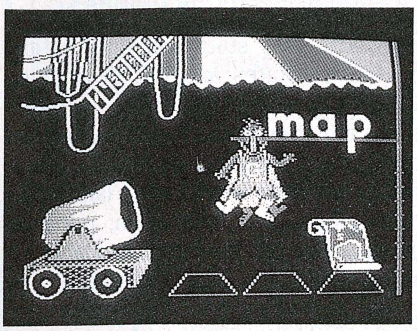
The fourth and fifth programs, *Circus* and *Muppet Labs*, have children match up beginning consonants with word endings.

The final program, *Muppet Words*, is a very simple word processor. Children use it to type letters, words, and numbers on their own. They can type in colors if they are using the Muppet Learning Keys. They can also call on a Muppet to erase the slate for them. In addition, children can make printouts of their writings to take home. The writings can be printed out exactly as they appear on the screen, large print and all. The results are very nice!

The documentation comes with a complete scope and sequence of stated objectives for every major content area, complete descriptions of every aspect of the program package, a dictionary of all vocabulary words used, and 26 classroom lessons for use with the *Muppet Word Book* exercises. In addition, you receive a large pack of durable picture cards; one for each picture shown on the computer screen.

One of the real strengths of this program is its ability to be used with a variety of input devices. This allows the teacher to cater to many types of motor abilities.

All in all, the *Muppet Word Book* is very well designed. However, there is one limitation. The software doesn't have a very good record keeping or maintenance capacity. It *does* measure a child's progress internally, in that it will not move to a more challenging level of a particular game until the child has gotten a certain amount of exercises correct; but it doesn't provide any type of on-screen tabulation that indicates how well a child has done on a set of exercises. This could make it difficult for a teacher to adequately evaluate a student's progress.



A circus performer creates a word in Muppet Word Book.

Price: $59
Policy: 30-day preview; backup included
Source: Sunburst Communications, 39 Washington Ave., Pleasantville, NY 10570; 914/769-5030

Evelyn Woldman, Adjunct Faculty
Lesley College, Cambridge, MA

FRACTION FUEL-UP

Computer: Apple II series; Commodore 64
Topic: Math
Grade Level: 4–6

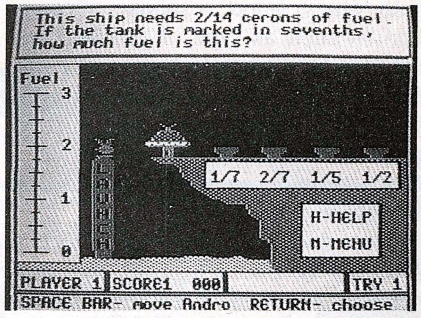
Fraction Fuel-Up is an arcade style drill-and-practice game that motivates students to solve math word problems involving fractions.

Game action begins at a spaceship refueling station. As a spaceship glides into the station, a word problem describing the ship's fueling needs appears at the top of the screen. For example: "The ship needs 3/4 cerons of fuel. If the tank is marked in eighths, how much fuel is this?"

Four fuel tanks appear on the right side of the screen. Each tank is marked with a different fraction. For example: 3/8, 4/8, 5/8, and 6/8. Players direct Andro, an intergalactic fuel attendant, to the correct fraction-marked fuel tank or combination of tanks that will solve the word problem. As players direct Andro to fill up the ship with this fuel, the amount is registered on a large fuel gauge displayed on the left side of the screen. If Andro fills to the proper level (in this case, 6/8), the spaceship can be launched, and another can land in its place.

Students have a total of three chances — and as much time as they want — to solve a problem. They receive a hint after each incorrect response, and after three unsuccessful attempts the answer is given.

If players successfully launch a set number of spaceships (students determine the number at the beginning of the game), they get to see a fleet of spaceships launch together.



Students use their knowledge of fractions to fuel a spaceship in Fraction Fuel-Up.

Also, points are awarded for each successfully launched spaceship. Points per ship are based on the number of tries players took before correctly solving the fuel problem and launching the ship. After each game (set of launches) a screen appears with a final tally and corresponding rank. The lowest score range receives a designation of "Trainee," while students who launch five spaceships in one try per ship are awarded the top rank of "Galactic Commander."

Fraction Fuel-Up offers students the option of playing alone or with a competitor; operating with or without sound effects or a joystick; and changing the standard three-problem set to include just one problem or as

(continued)

(continued from page 47)

many as five.

The program also allows students to select one of five kinds of fraction problems to use in the game. They can choose to reduce or rename fractions, find equivalent fractions, add or subtract fractions with like or unlike denominators, or add or subtract mixed numbers with like or unlike denominators.

There is also a "Special Problems" option that lets you write your own fraction exercises for children to solve — such as problems involving the multiplication and division of fractions. (Fraction multiplication and division are not included in the main program.)

Student scores can be saved along with other game response information — such as type of problem and number of ships selected — in *Fraction Fuel-Up*'s Player Response System. The system can store current records for up to 75 players at a time, and you can review this data on screen or print it out.

The documentation for *Fraction Fuel-Up* is excellent, but the program's onscreen directions are so clear, concise, and legible that you can actually use the software without its accompanying user's guide.

Fractions have been a constant source of pain for many students throughout the years. Now students have a good reason to reduce to lowest terms, find like denominators, and so on. If they don't, their spaceships will never leave the pad! This is a fine example of putting the power of computer motivation to excellent use.

Price: $29.95
Policy: $15 backup; 30-day preview
Source: Developmental Learning Materials, One DLM Park, Allen, TX 75002; 800/527-4747

David Friday, Media Director
Laraway District 70-C, Joliet, IL

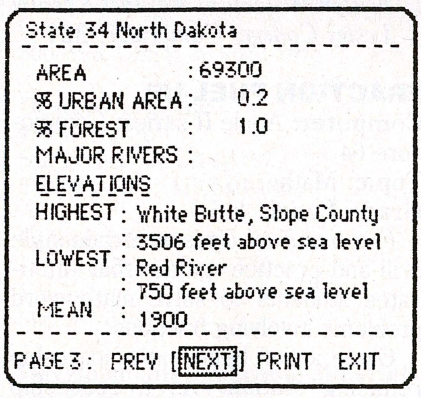
USA PROFILE

Computer: Apple II series, IBM PC/PCjr
Topic: Social studies
Level: Grades 5–12

Data analysis is an important part of any social studies curriculum, and *USA Profile* is an ideal introduction to organizing and understanding many forms of data. This specialized data base program covers geographical, historical, and statistical information on the 50 states and the District of Columbia. Information is broken down into categories such as capitals, borders, climate, income, labor force, population mobility, land use, demography, and education; updated information will be made available to registered users of the software.

By providing the raw data for study, *USA Profile* allows students to compare and analyze information without having to do extensive research. The program does not analyze data for students; the data base is deliberately limited to filing and searching capabilities so that students come to their own conclusions and arrive at their own understandings.

The teacher's guide is clear, complete, and informative. The material is divided into study units that list specific tasks, knowledge objectives, and skills to be introduced. Reproducible worksheets covering a wide range of tasks — from simple information retrieval to complex data analysis — and an illustrated tutorial are also included.



Data file from USA Profile.

USA Profile removes the tedium of searching through many reference works to locate data, thereby allowing both teachers and students to concentrate on the analysis of data. Searches through the data base are made very quickly, which means many students can use the program in a short time. *USA Profile* fits nicely into a classroom where groups of students are working together on analysis activities.

Price: $148
Policy: $30 backup boot disk; $20 for additional data disk; 30-day preview with purchase order
Source: Active Learning Systems, P.O. Box 1984, Midland, MI 48604; 517/835-7051

Jane Pratt, Supervisor, Computer Education, Columbus Public Schools, Columbus, OH

BASIC MATH FACTS

Computer: Apple II series
Topic: Math
Level: Grades K–8

Basic Math Facts is a computer-managed drill and practice program that allows a teacher to give specific drill assignments on screen; to review student progress; and to print out student status reports, customized worksheets, and individualized quizzes.

With this program, you can give assignments that drill specific basic addition, subtraction, multiplication, or division facts; or a mix of these facts. Each fact in a drill series appears on the screen, one at a time, for the child to complete. In the corner of the screen, the program displays, at all times, a visual record of a child's correct responses to a drill series.

The program has other helpful features. You can print out a status report on a student or print out customized worksheets. The customized worksheet option enables you to focus math exercises on arithmetic facts that give students trouble, to review facts already mastered, or to preview new math facts. You can also print out customized quizzes on any material covered.

The documentation is excellent because it is clearly written and provides everything you need to know to use the program. The directions for all of the teacher management options are concise and very easy to understand.

Basic Math Facts' onscreen drills and off-screen worksheets provide an effective method for studying basic arithmetic concepts. It's superior to

(continued)

SOFTWARE SHOWCASE

other programs I've seen with similar objectives. The program is best suited for individual student use.
Price: $195
Policy: Backup included
Source: Houghton Mifflin Educational Software Division, P.O. Box 683, Hanover, NH 03755; 603/448-3838

Linda Morris, Instructional Computer Consultant, North East Independent School District, San Antonio, TX

LOGOWRITER

Computer: Apple II series (64K), IBM PC/PCjr (128K), Tandy 1000 (use IBM version)
Topic: Logo programming, writing, art, music, math, history
Grade Level: K–8

With the *LogoWriter* package, you can do everything you can do with other Logos, plus, you can perform word processing functions. *LogoWriter* also provides four turtles and ready-made shapes and shape-making capabilities that invite a wide variety of animation projects.

The package consists of a master program disk as well as utility and tutorial programs. There are also six project booklets, accompanying activity cards, a teacher's manual, a programming reference guide, posters, and keyboard stickers that illustrate key commands.

The Reference Guide is divided into three sections. The Overview explains how to use the utility programs and special keys. The second presents *LogoWriter* primitives (primary commands) in a clear and easy-to-understand format. The third section includes six appendices that provide technical information.

The Teacher's Manual introduces the educational philosophy behind *LogoWriter* and provides an overview of the teaching materials as well as information on how to organize the classroom and how to evaluate projects when using the program. Six chapters, based on the six project books, walk the teacher through different aspects of *LogoWriter*. Each chapter includes off-computer activities, instructions on how to introduce the concepts to be discussed, instructions on how to use the Project Booklets and Activity Cards, and ex-

(continued)

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(continued from page 49)

tension activities.

The Project Booklets and Activity Cards are designed for students to use while working at the computer. Each includes projects with step-by-step directions and suggestions for further learning. The booklets and activity cards are color coded for easy reference. Each set of booklets and cards focuses on specific subject areas. For example, "You and Your Friends" includes projects related to social studies, language arts, and math. Each booklet contains its own glossary of primitives and associated terminology. By doing these projects, students learn how to use *LogoWriter* to develop their own projects.

Reference Cards that list the basic *LogoWriter* primitives and what they do are also included. In general, these cards are useful as reminders, but should not be used to teach a concept.

The utilities disk allows files from other versions of Logo or word processing programs to be converted into *LogoWriter* files.

The learning materials are generally excellent. The projects I selected and used with fifth graders caught kids' interest and imagination. The word processing capabilities make short creative writing projects with Logo easy and engaging. We used the "Adventure Story" activity, which involves writing a story with two endings. The reader chooses the kind of ending he or she wants to read by selecting one of the ending options presented by the author. This can be done because the text pages are manipulated like procedures. Text pages are assigned a name, and can be called up like a procedure.

It is important to realize that *LogoWriter* is not like other word processors because text pages are treated like procedures. This capability opens up a wide variety of programming projects, like illustrating short stories and poems. However, lengthy writing projects are awkward. The program does not automatically paginate text on the screen or printed page, and it does not indicate where the page will end if you print it out.

To teach *LogoWriter* effectively, teachers must know how to use the package themselves before attempting to bring it into the classroom. The concept of using four turtles when working with graphics will be new to most teachers. It took more time than I expected to learn to use the package, but I enjoyed the experience.

I did encounter one weakness in the Reference Guide, however. The discussion of printing text and graphics is too brief. I had problems with my particular system—the guide should warn the user of possible problems and either provide more information in the package or upon request.

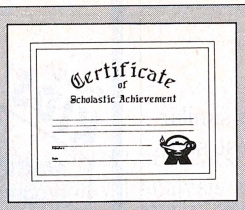
Although the Reference Cards are helpful, they do not relate specifically to each booklet. Each booklet should have a card explaining the primitives and special keys needed to do its projects. I ended up making my own "directive" cards, which were a big help.

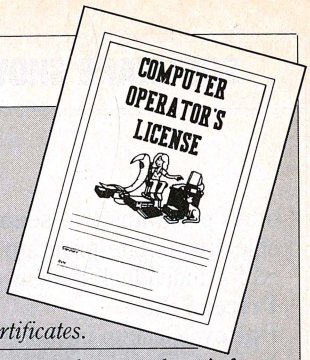
Overall, the total *LogoWriter* package is excellent and well worth the expense.

Price & Policy: $395 for school site license that permits schools to make copies of the program for classroom use; $150 additional to make home copies for students; $99 for program updates and new *LogoWriter* products.

Source: Logo Computer Systems Inc., 555 West 57th St., Suite #1236, New York, New York 10019; 212/765-4780

Evelyn Dale, Teacher Education Faculty, California State University at Sacramento ■





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CERTIFICATE MAKER

Computer: Apple II series, IBM PC/PCjr
Program Type: School utility
Grade Level: All
Hardware Requirement: Requires a dot matrix printer

Certificate Maker lets you create a wide variety of personalized certificates that can be awarded to students in recognition of special achievements.

The program provides more than 200 professionally designed, partially completed certificates called *templates*. Some templates are designed for specific occasions such as for academic achievements or sporting triumphs. Others are multipurpose or open-ended so that you can complete them to serve any need. Many of the templates include amusing graphics.

To make a certificate, you input the number of the template you want (a "Certificate Catalog" of template choices appears in the back of the documentation booklet). Next, you electronically choose one of 24 borders and one of five type fonts for your certificate. Then you type in the recipient's name and any other information you wish to have appear in the blanks provided on the template. You are then ready to print out your certificate. After it's printed, you can stick on one of the 36 paper seals that come in the program package.

If you wish to present a personalized version of the same certificate to several students, *Certificate Maker* provides a feature called *name wildcard* that lets you insert different names into otherwise identical certificates.

This program is excellent. It's easy to use and should pay for itself by saving funds usually set aside for purchasing certificates and other awards.

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Price: $49.95, Apple; $59.95, IBM
Policy: 30-day preview; $12 backup
Source: Springboard Software, Inc., 7808 Creekridge Circle, Minneapolis, MN 55435; 612/944-3912

Mary E. Drew
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TEACHER'S HELPER

PROGRAM CONVERSIONS AND WORKSHEET ANSWERS

PROGRAM LISTING FOR WRITE A FANTASY

(continued from page 33)

```
1590 PRINT "AT THE TOP, I FOUND A NOTE THAT READ:"
1600 PRINT:PRINT "  TO UNLOCK THE SECRET OF THE";MO$
1610 PRINT "TREE, A HUMAN MUST SAY 'THERE'S NO"
1620 PRINT "PLACE LIKE ";WO$;"' THREE TIMES"
1630 PRINT "BACKWARDS."
1640 PRINT:PRINT "  I SAID, '";WO$;" LIKE PLACE NO"
1650 PRINT "THERE'S, ";WO$;" LIKE PLACE NO"
1660 PRINT "THERE'S, ";WO$;" LIKE PLACE NO ..."
1670 GOSUB 4000
1680 PRINT "  THE ";EV$;" SWOOPED DOWN, BUT"
1690 PRINT "BEFORE THEY COULD GRAB ME, I FINISHED"
1700 PRINT "THE BACKWARDS SENTENCE--'THERE'S!'"
1710 PRINT:PRINT "  THE ";EV$;" SCREAMED AND"
1720 PRINT "A ";MO$;" TOOK THEIR PLACE."
1730 PRINT "  'VERY SOON,' SAID THE WIZARD,"
1740 PRINT "'";HA$;"'"
1750 PRINT:PRINT "           THE END"
1760 IF C$="2" THEN PRINT:PRINT CHR$(4)"PR# 0"
1770 REM GO BACK TO START?
1780 PRINT:PRINT "WOULD SOMEONE ELSE LIKE TO WRITE A"
1790 PRINT "FANTASY STORY NOW (Y/N)?";
1800 GOSUB 2000:IF K$<>"Y" AND K$<>"N" THEN 1800
1810 IF K$="Y" THEN 20
1820 PRINT:PRINT
1830 PRINT "  NICE WORKING WITH YOU, ";AU$;" ...":END
2000 REM GET KEY
2010 GET K$
2020 K=ASC(K$):IF K>96 AND K<123 THEN K$=CHR$(K-32)
2030 RETURN
3000 REM PRESS SPACE BAR
3010 VTAB 24:HTAB 6
3020 PRINT "PRESS <SPACE BAR> TO CONTINUE.";
3030 GOSUB 2000:IF K$<>CHR$(32) THEN 3030
3040 HOME:RETURN
4000 IF C$="1" THEN GOSUB 3000:PRINT:RETURN
4010 PRINT:RETURN
```

PROGRAM CONVERSIONS FOR: FANTASY WRITER

The BASIC program on page 33 is written for the Apple II series of computers. Here are step-by-step instructions for adapting this listing for use on IBM and Commodore computers.

Commodore 64

Use the Apple II version with the following alterations: Change HOME to PRINT CHR$(147); in lines 100, 800, 890, and 3040. Also, change lines 20, 870, 1760, 2010, and 3010 to read as follows:

```
20 CLR:PRINT CHR$(147);
870 PRINT:CLOSE 4:OPEN 4,4:CMD4
1760 IF C$="2" THEN PRINT#4:CLOSE 4
2010 GET K$:IF K$="" THEN 2010
3010 POKE 214,23:PRINT:PRINT TAB(5);
```

IBM PC/PCjr

Use the Apple II version with the following alterations: Delete line 870. Change HOME to CLS in lines 100,800, and 3040. Change PRINT (without prompt) to PRINT#1," " in lines 900, 910, 960, 990, 1030, 1050, 1080, 1140, 1180, 1210, 1280, 1300, 1360, 1380, 1420, 1480, 1490, 1520, 1550, 1600, 1640, 1710, 1750, and 4010. Change PRINT (with prompt) to PRINT#1, in lines 900, 920-1560, 1580-1660, and 1680-1750. For example, change lines 900-920 to read as follows:

```
900 PRINT#1,"":PRINT#1,"A FANTASY STORY WRITTEN BY "
;AU$
910 PRINT#1,"":GOSUB 4000
920 PRINT#1," LET ME INTRODUCE MYSELF. I MIGHT SEEM"
```

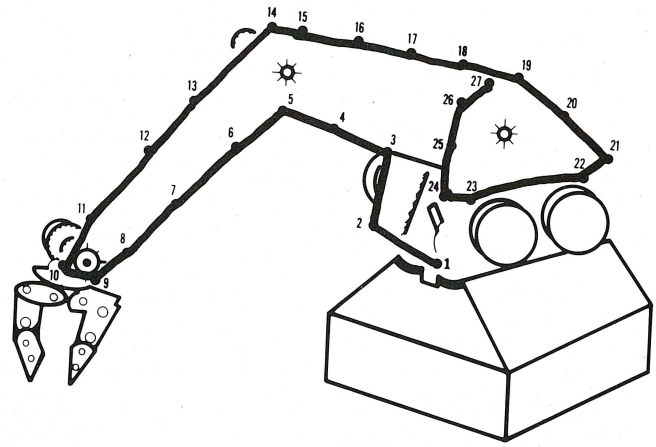
Finally, change lines 20, 780, 890, 1760, 2010, and 3010 to read as follows:

```
20 CLS:KEY OFF
780 CLOSE#1:C$=K$:IF C$="2" THEN OPEN "LPT1:"FOR OUTP
UT AS #1 ELSE OPEN "SCRN:" FOR OUTPUT AS #1:GOTO 880
890 CLS:PRINT#1,TAB((40-LEN(WO$))/2);WO$:PRINT#1,""
1760 CLOSE#1
2010 K$=INKEY$:IF K$="" THEN 2010
3010 LOCATE 24,6
```

ANSWERS TO POSTER WORKSHEETS

Primary #1: Lines should be drawn to connect the camera to the eye; wheels to the feet; CPU to the brain; and mechanical arm to the arm.

Primary #2: Here is the finished drawing.



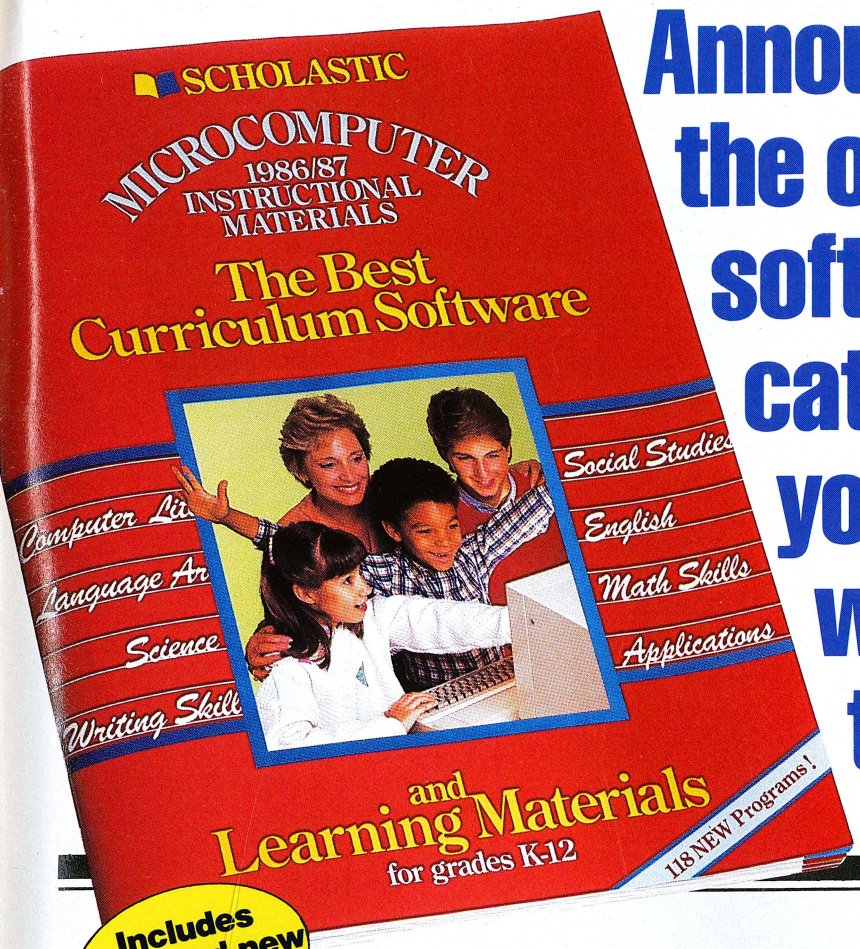
Intermediate #1: Here are possible routes for Speed E. Robot. Other answers are possible. 1. GO SOUTH 3 BLOCKS, GO EAST 1 BLOCK, GO SOUTH 1 BLOCK, GO EAST 1 BLOCK; 2. GO EAST 2 BLOCKS, GO NORTH 4 BLOCKS, GO WEST 1 BLOCK; 3. GO EAST 1 BLOCK, GO NORTH 2 BLOCKS, GO EAST 1 BLOCK, GO WEST 1 BLOCK, GO SOUTH 2 BLOCKS, GO WEST 1 BLOCK; 4. GO WEST 1 BLOCK; GO SOUTH 2 BLOCKS, GO WEST 2 BLOCKS, GO NORTH 2 BLOCKS, GO WEST 2 BLOCKS, GO SOUTH 1 BLOCK. Bonus: At the park.

Intermediate #2. Here are the answers to the quiz: 1. False. Anyone can buy a kit to build a robot. 2. False. They can only do what humans program them to do. 3. False. They are modeled after robotic machines, but they don't have computers in them. 4. True. Some robots have special sensors that send signals to the robot's computer when something is in its way. 5. True. 6. False. Jason Jr. is designed for underwater work. 7. True. 8. False. Most robots (like the kind that work in factories) are only arms. 9. False. Robots don't have feelings! 10. True.

EDITOR'S NOTE

In the October 1986 issue of *Teaching and Computers*, we neglected to mention that Terrapin, Inc. gave us permission to reprint the graph making procedures that appear on page 40 of the "Halloween Graphs" article. The procedures came from Terrapin's *Utilities II Package* software.

The *Utilities II Package* contains 36 files covering all areas of Logo use. The package has recently been enhanced so that it can be used in conjunction with the *Apple ® Imagewriter II* for printing Logo graphics in color. It sells for $19.95. Contact: Terrapin, Inc., 222 Third St., Cambridge, MA 02142.



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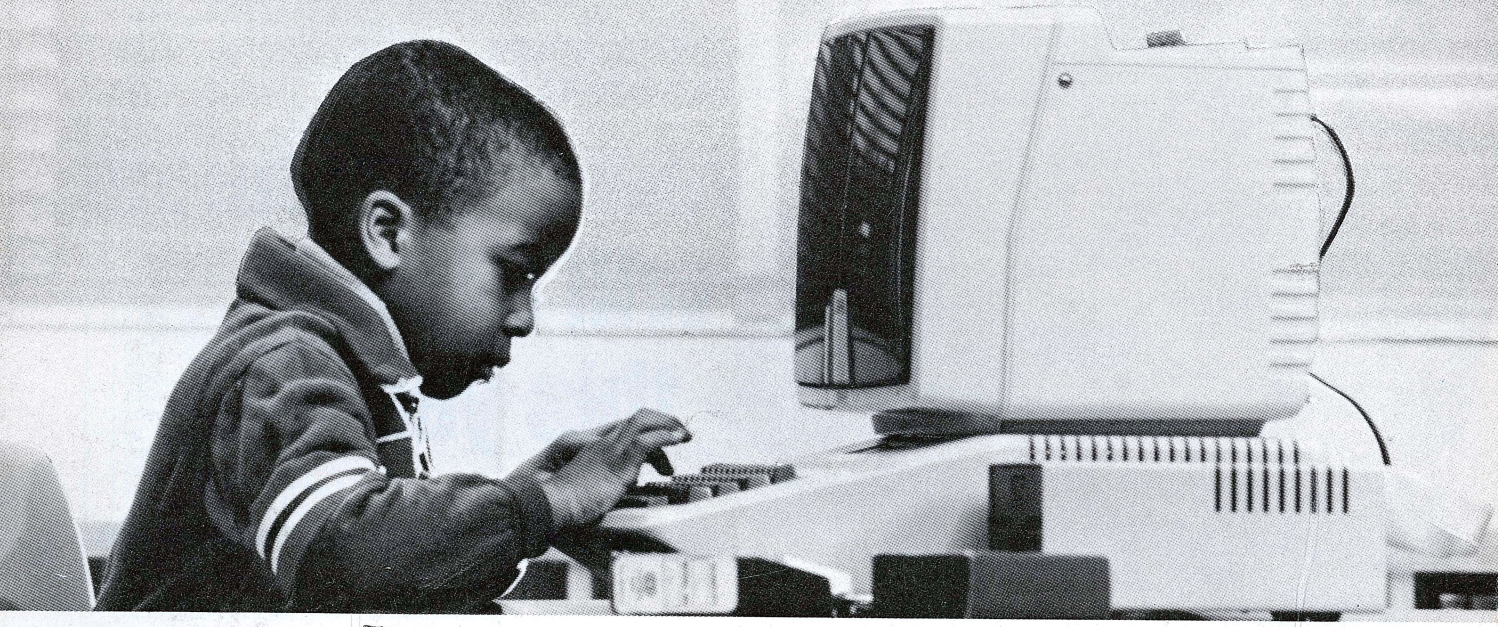

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